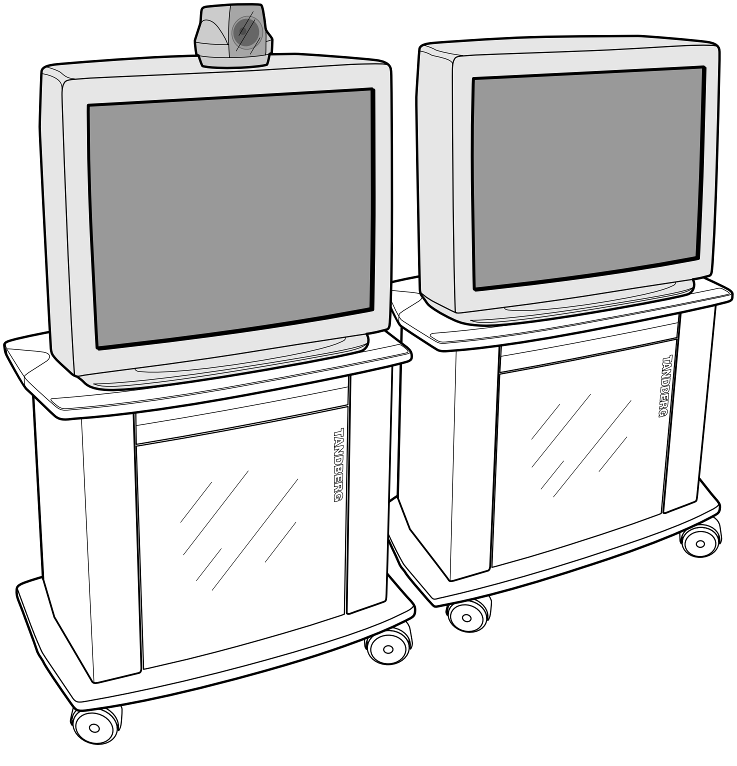
TANDBERG

VISION 5000

User Manual



Software version C4

D11273-4.0

Trademarks and copyright

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This document was written by the Technical Support Department of Tandberg, Norway. We are committed to maintaining a high level of quality in all our documentation. Towards this effort, we welcome your comments and suggestions regarding the content and structure of this document. Please fax or mail your comments and suggestions to the attention of:

Technical Support Department
Tandberg, Philip Pedersensvei 22
1324 Lysaker, Norway
Tel: +47 67 125 125
Fax: +47 67 125 234

Environmental Issues

Thank you for buying a product which contributes to a reduction in pollution and thereby helps save the environment.

Our products reduce the need for travel and transport and thereby reduce pollution.
Our products have either none or few consumable parts (Chemicals, toner, gas, paper).
Our products are low energy consuming products.

Battery handling:

Batteries for the Remote Control are Long Life and Alcaline batteries saving the environment, please follow guidelines on the packing material for handling and disposal of the batteries.

Waste handling:

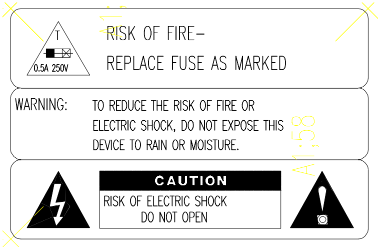
No need to send material back to Tandberg as there are no consumables to take care of.
Please contact your local dealer for information on recycling the product by sending the main parts of the products for disassembly at local electronic waste stations, recycable parts are marked so the waste station can disassemble and re-use recycable parts.

Production of products:

Our factories employ the most efficient environmental methods for reducing waste and pollution and ensure the products are recyclable.

Operator Safety Summary

For your protection, please read these safety instructions completely before operating the equipment and keep this manual for future reference. The information in this summary is intended for operators. Carefully observe all warnings, precautions and instructions both on the apparatus and in the operating instructions.



Equipment Markings
The lightning flash symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated “dangerous voltages” within the product’s enclosure that may be of sufficient magnitude to constitue a risk of electrical shock.

The exclamation mark within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions within literature accompanying the equipment.

Warnings
Water and moisture - Do not operate the equipment under or near water - for example near a bathtub, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool or in area with high humidity.

Cleaning - Unplug the apparatus from the wall outlet before cleaning or polishing. Do not use liquid cleaners or aerosol cleaners. Use a lint-free cloth lightly moistened with water for cleaning the exterior of the apparatus.

Ventilation - Do not block any of the ventilation openings of the apparatus. Install in accordance with the installation instructions. Never cover the slots and openings with a cloth or other material. Never install the apparatus near heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

Grounding or Polarization - Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician.

Power-Cord Protection - Route the power cord so as to avoid its being walked on or pinched by items placed upon or against it, paying particular attention to the plugs, receptacles, and the point where the cord exits from the apparatus.

Attachments - Only use attachments as recommended by the manufacturer.



Accessories - Use only with a cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

Lightning - Unplug this apparatus during lightning storms or when unused for long periods of time.

Servicing - Do not attempt to service the apparatus yourself as opening or removing covers may expose you to dangerous voltages or other hazards, and will void the warranty. Refer all servicing to qualified service personnel.

Damaged Equipment - Unplug the apparatus from the outlet and refer servicing to qualified personnel under the following conditions:

When the power cord or plug is damaged or frayed.
If liquid has been spilled or objects have fallen into the apparatus.
If the apparatus has been exposed to rain or moisture
If the apparatus has been subjected to excessive shock by being dropped, or the cabinet has been damaged
If the apparatus fails to operate in accordance with the operating instructions

Contents

Introduction

This User Manual is provided to help you make the best use of your Vision 5000 system. The Vision 5000 offers superior quality audio and video in a fully-featured rollabout unit. Incorporating plug and play technology, the system can be effortlessly moved within the office environment. The Vision 5000 is an ideal choice for mid to large group applications and is available with single or dual monitors.

Features:
- Compatibility with other videoconferencing systems conforming to the H.320 and T.120 standards.
- Selection of up to 12B channel (768 kbps) call quality.
- SoftMux - innovative internal software IMUX which increases reliability and eliminates the need for an additional external multiplexer.
- Downspeed - if channels are dropped during a videoconferencing session, Downspeeding automatically maintains the connection without interrupting the call in progress.
- W.A.V.E (Wide Angle View) Camera - delivers the widest angle of view in the industry.
- Support for multiple W.A.V.E. Cameras.
- Web-interface for management and diagnostics.
- Software upgrades via LAN.
- Natural Audio module - Frequency-compensated loudspeaker system optimised for voice response.
- Provision for connecting auxiliary cameras, additional microphones, document camera, telephone add-on, Personal Computer (PC), and Video Cassette Recorder (VCR).
- On-screen real-time user feedback and help.

The Vision 5000 is available with different network configurations.
To find your configuration, see '*Power Up and System Info*' or boot-up text.

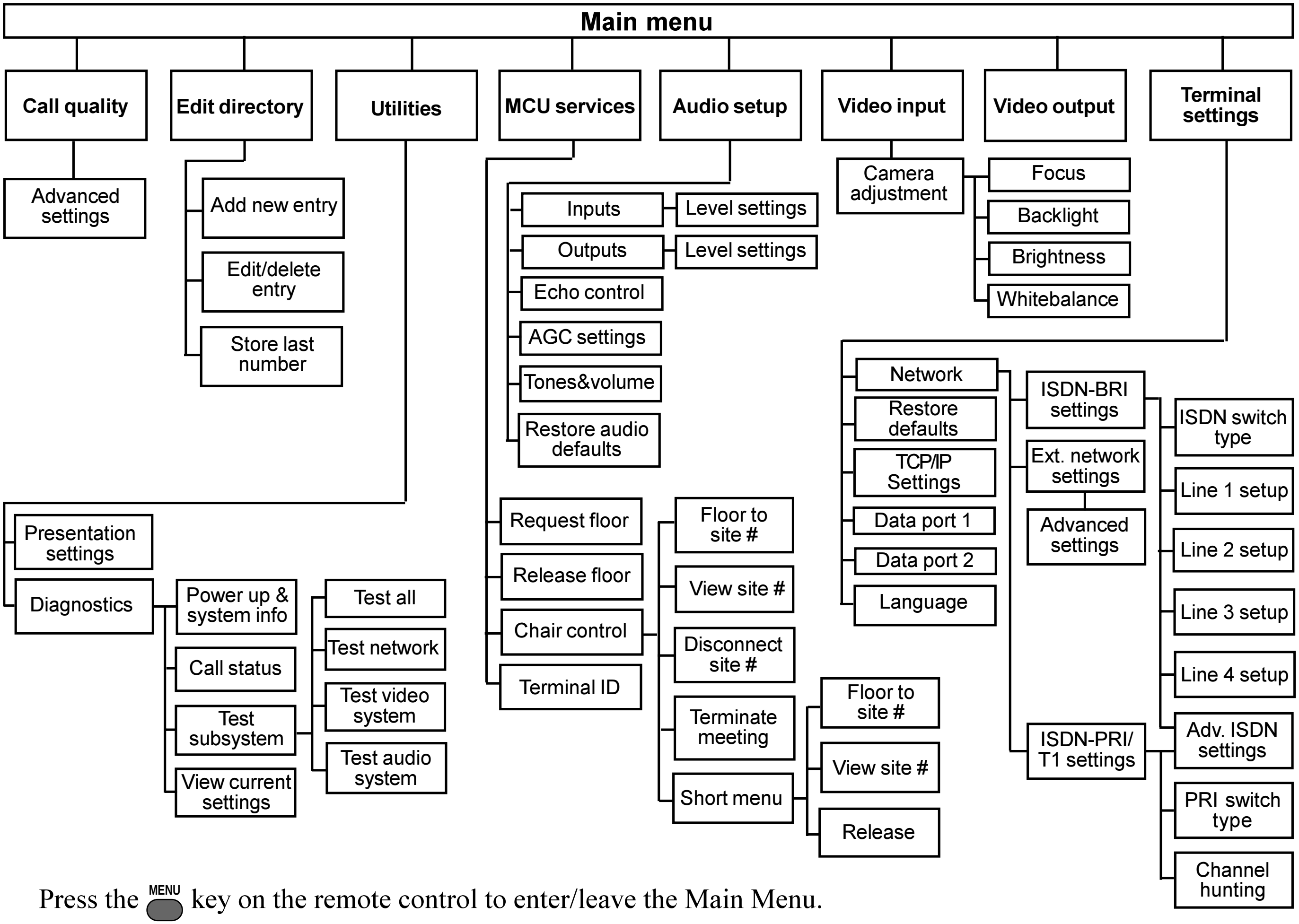
Hints and tips boxes
In this guide, we've included helpful tips and notes. They appear in grey boxes like this one.

How to use this guide

- to gain a basic understanding of how to control your system - see '*Getting started*' and '*General use*'.
- when you need to use basic features - see '*General use*'.
- as a reference when you need more details about the system features - see '*Advanced use*'.

Menu structure

The Vision 5000 on-screen menu structure is shown below.



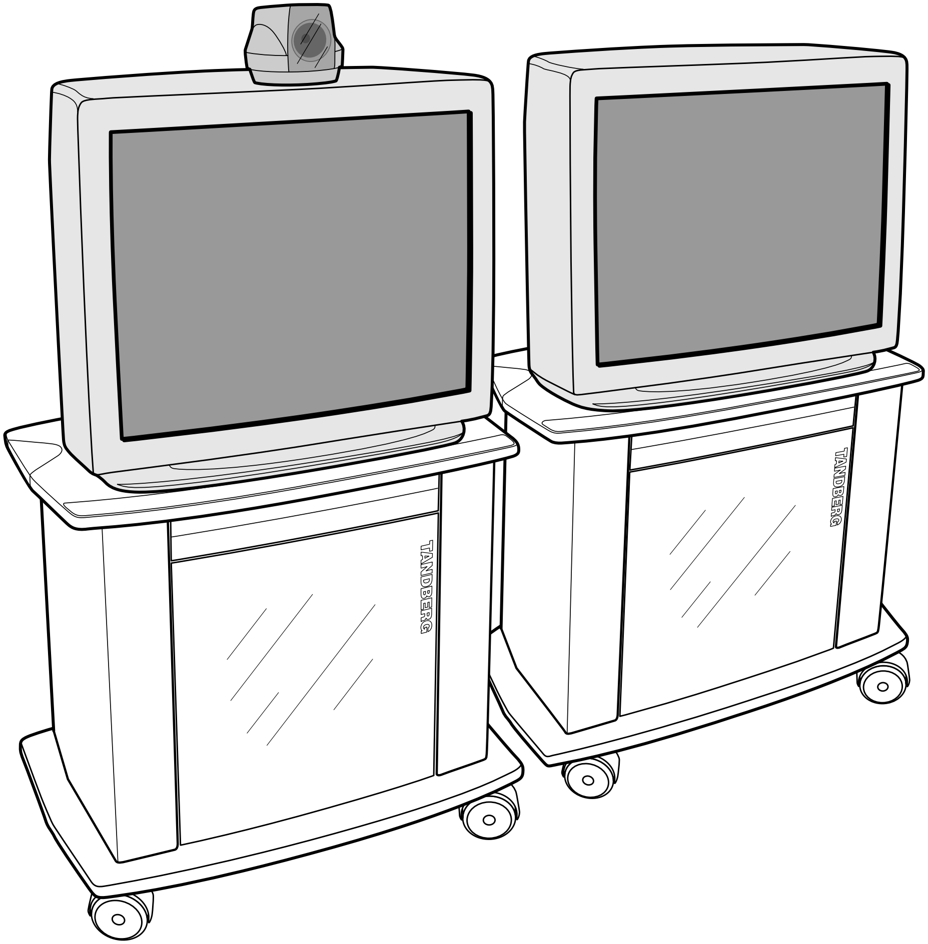
Press the MENU key on the remote control to enter/leave the Main Menu.

Press the UP, DOWN, LEFT and RIGHT keys to move through the menu structure.

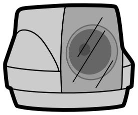
Press the OK key to confirm your selection and display the selected menu item options.

Vision 5000 videoconferencing system

At a glance — the Vision 5000 system



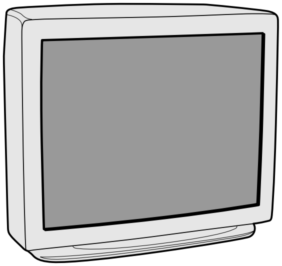
Camera



The Main Camera is mounted on top of the monitor. The Main Camera includes a high quality colour camera with a fast pan/tilt/zoom action. The Main Camera is controlled by the system's infra-red remote control and operates pan/tilt, focus and zoom.

You can pre-store up to ten camera positions using the remote control.

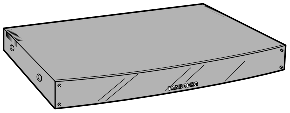
Monitor(s)



The monitor displays the far-end and near-end videoconferencing sites. The standard system also utilizes the built-in speaker of the monitor. If the Natural Audio module is installed (optional), the monitor speaker is not used. The monitor is also used for displaying the Vision 5000 menus, on-screen help, video from connected video sources and high-resolution still images.

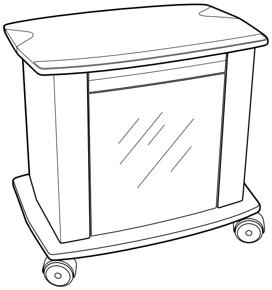
You can also connect a second monitor for displaying self-view and still images.

Codec



The Codec is the heart of the system. The main task for the Codec is the compression of outgoing video, audio and data, the transmission of this information to a remote site and the decompression of the incoming information. Hence the name Codec. Intelligent Call Management (ICM) and the SoftMux are features built into the Codec.

Cart



The cart is easily movable with large wheels and handles.

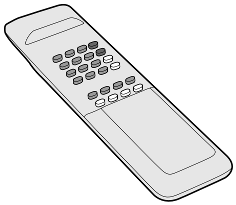
The Codec is located inside the cart.

Below the Codec is an accessories drawer for storing the remote control, your user manual and other accessories. Push gently in on the drawer and it will pop out.

The Natural Audio module (optional) is mounted above the Codec.

Below the Codec there is room for additional equipment, e.g. a VCR, or a PC.

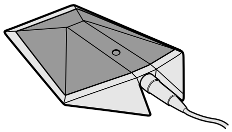
Remote control



The remote control is used to control all functions of the Vision 5000.

> **Note:**
> There is a separate remote control for operating the monitor

Table microphone



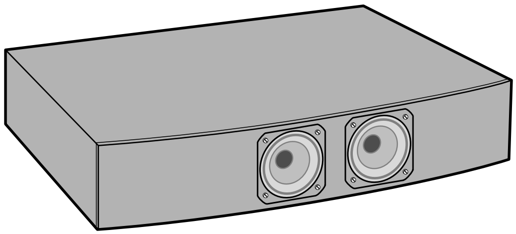
The high quality table microphone is specially designed to be used on a table during a video conference.

The ideal location for the microphone is on a flat surface at least 2m (6.5 ft) from the front of the Vision 5000. The microphone cable should always point towards the Vision 5000.

You can connect up to three microphones without the need for an external audio mixer.

The Vision 5000 will automatically equalize sound levels. Loud and soft voices are picked up and transmitted to the far end at approximately the same level.

TANDBERG Natural Audio module (optional on some systems)



The Natural Audio module is designed to improve audio quality during a videoconference. It is mounted in the cart above the Codec and consists of a audio system optimized for speech. The monitor speaker is not used when using the Natural Audio module. See ‘Peripheral Equipment’ for further information.

TANDBERG AudioScience module (optional)

The AudioScience module is a prize winning ceiling-mount microphone system. It is designed to improve audio quality during a videoconference and is an alternative to tabletop microphones.

Installation

Precautions

- Never install telephone wiring during a lightning storm.
- Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations.
- Never touch uninstalled telephone wires or terminals unless the telephone line has been disconnected at the network interface.
- Use caution when installing or modifying telephone lines.
- Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electrical shock from lightning.
- Do not use the telephone to report a gas leak in the vicinity of the leak.
- The socket outlet shall be installed near to the equipment and shall be easily accessible.
- Never do any installation of cables without first switching the power OFF.
- 1TR6 network type is not approved for connection directly to the telecommunications network. This network type is only to be used behind a PABX.
- X.21 network type is not approved for connection directly to the telecommunications network. This network type is only to be used together with already approved equipment, and is not meant for direct connections to the telecommunication networks.
- V.35/RS-449/RS-366 network type is not approved for connection directly to the telecommunications network. This network type is only to be used together with already approved equipment, and is not intended for direct connection to the telecommunication networks.
- This product complies with directives:
  89/366/EEC
  93/261/EEC

Unpacking

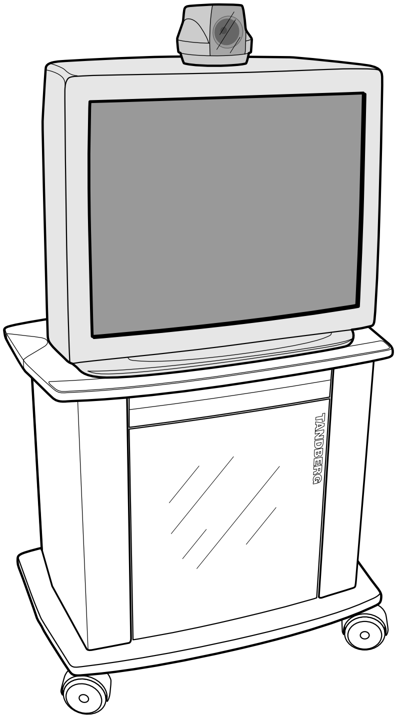
To avoid damage to the unit during transportation the Vision 5000 is delivered as separate components. We recommended that you store all packaging material in case the need should arise to transport the system to another location.

Note
Please follow the instructions carefully.

The Vision 5000 consists of the following items:

- Cart
- High quality monitor
- Option: Dual Monitor. Consists of an extra cart and an additional high quality monitor

Inside the cart you should find the accessories box which will contain the following:



- Camera
- Table Microphone
- Remote Control
- Batteries
- User Manuals
- Monitor securing kit and other documentation

Important
The camera should be aligned with the front edge of the monitor to ensure the IR-sensor in the camera can pick up signals from the remote control.

Please retain the accessories box in case of future transportation requirements.

Place the monitor on top of the cart and ensure it is stable. You may fasten the monitor to the cart using the securing kit. Take the camera and remove the plastic backing from the double sided tape-pads on the base of the unit. Place the camera centrally, on top of the monitor close to the front (see picture on left).

Connecting cables

All cables needed in standard configuration are connected to the Codec. These Codec inputs are marked green. Connect:

- Vision 5000 power cable and monitor power cable to an electrical distribution socket.
- **Europe:** Scart connector to one of the Scart connectors on the monitor, (for a 29” monitor, use Ext-1).
- **USA:** Connect the cable terminating in two RCA connectors and one S-video connector to the monitor. The two RCA connectors are for the left and right audio channels (not if Natural Audio module is mounted). The S-video connector is for video. The audio signal from the Vision 5000 is a monaural signal and therefore is fed into both audio-in sockets on the monitor.
- Microphone to the microphone cable.
- Connect the camera and the camera cable. The camera cable terminates in a 15 pin D-SUB connector.

ISDN cables - using BRI interface

Take the four ends of the ISDN cables and verify that they are labelled ISDN 1, 2, 3 and 4.

> **Note**
> Some software versions of Vision 5000 do not support 4 ISDN lines.

Connect ISDN cable No. 1 to the first ISDN socket (S/T-interface) provided by the service provider. This will be your main number. Connect ISDN cable No. 2 to the second ISDN socket, ISDN cable No. 3 to the third ISDN socket and ISDN cable No. 4 to the fourth socket (if used).

USA: The Vision 5000 does not have a built in network terminator. If your wall socket provides you with an ISDN U-interface, you will need an NT1 between your Vision 5000 and your ISDN line, see Appendix 1.

> **Note**
> Write down the numbers associated with each of the ISDN lines. You will need them later to configure the system.

Connecting to the Switched 56 network

When connecting to the Switched 56 network you may use one of the BRI interfaces or the V.35 interface on the Vision 5000. Please refer to Appendix 2 for further information.

ISDN cable - using the PRI/T1 interface

If you are using the PRI/T1 interface, the PRI/T1 cable should be connected to a CSU (Channel Service Unit). You will need a CSU between your Vision 5000 and the line from your network provider, see Appendix 3.

Power on monitor

Power on the monitor and use the monitor remote control to select the Audio/Video input used (refer to your monitor manual). Remember to select S-video (S-VHS) input to avoid a black and white picture.

Example 29” monitor (not USA)

For the JVC av-29TS2/ BD3 29” monitor select the External input for Scart 1 and then select an S-VHS (S-Video) signal. Do this by pushing the **0/AV** button on the monitor remote control until the **E1** message is displayed. To select S-VIDEO input please do the following (using the monitor remote control):

- Press **OK**. *The MENU appears.*
- Press □/□ to select **EXT SOURCE**, then press **OK**. *The EXT SOURCE menu appears.*
- Press □/□ to select **EXT SETTING**, then press **OK**. *The EXT SETTING menu appears.*
- Press □/□ to select an **EXT** input terminal.
- Press yellow button. *The S-VIDEO input indication appears.*
  Toggle between Composite Video and S-VIDEO with the yellow button.
- Press **OK** to exit menu.

Example 33” monitor (not USA)

For the Grundig M84 33” monitor you have to select the External input for Scart 1 and then select S-VHS(S-Video) signal. Do this by pushing the **0/AV** button on the remote control until the **AV 1** message is displayed on the monitor. To select S-VIDEO input please do the following:

- Press i and **OK**. *The DIALOG CENTER appears.*
- Press P+□/□P- to select **AUDIO/VIDEO INPUTS**, then press **OK**.
  The AUDIO/VIDEO INPUTS menu appears.
- Select **Video recorder** using the P+□/□P- keys.
- Press the - ◀ ▶ + buttons until the SVHS input indication appears.
- Press the **TXT** button to exit from the menu.

You only need to set this once as the monitor will remember its setting even if powered off.

To let the monitor automatically start up in the last AV position you had when you turned it off, follow this example:

- Press i and **OK.** *The DIALOG CENTER appears.*
- Press P+□/□P- to select **SPECIAL FUNCTIONS**, then press **OK**.
  The SPECIAL FUNCTIONS menu appears.
- Press P+□/□P- to highlight Switch **on with**, select **AV** with the - ◀ ▶ + keys.
- Press P+□/□P- to highlight **Mains economy sw.**, select **Off** with the - ◀ ▶ + keys.

Press the **TXT** button to exit from the menu.

Example monitor (USA)

- When you start up the monitor for the first time you will get up an auto setup screen. Quit this screen by pressing the setup button on the monitor.
- Press the TV/VIDEO button either on the remote control or on the monitor. The monitor is now set.
- The monitor will automatically remember its last setting. This means that if the monitor is set to VIDEO mode and you turn it off, next time you turn it on again it will start up in VIDEO mode.

Power on codec

- Check that the power switch on the Vision 5000 (located on the right hand side at the rear of the unit) is set to ‘on’ and that a green light is showing (located in the centre at the front of the codec).
- After the Vision 5000 has performed a self-test routine, power up information and product status will be displayed on the monitor for a short while (white text on blue background). Check that selftest is OK and that the ISDN lines are reported as active.
- Press the ACCEPT END CALL key on the Vision 5000 remote control. A dial tone should be heard.
- Using the monitor remote control, adjust the volume on the monitor to a level of your choice. This volume will be the default volume for all calls.

> **Tip**
> Once the Vision 5000 has been switched on it can be left on at all times.

Configuration

For each installation of the Vision 5000 it is necessary to configure the unit. All configuration parameters are available via the ‘Terminal Settings’ menu through the on-screen menu system. If you are using an external IMUX or special networks, the external equipment may also need to be configured.

• Press MENU on the remote control. Select the menu ‘*Terminal Settings*’, then *‘Network’*.

ISDN-BRI configuration

When using the internal SoftMux on ISDN-BRI, select ‘*Current Network: ISDN-BRI*’, enter *‘ISDN-BRI Settings’*, select *‘Switch Type’* and *‘Line1-4 Setup’*. For details, follow the instructions in chapter ‘Terminal Settings’, ‘ISDN-BRI Settings’ in this guide.

For further information refer to the examples in:

Appendix 1: Connecting Vision 5000 to ISDN using NT1 network adapters

Appendix 2: Connecting Vision 5000 to the Switched 56 network

ISDN-PRI/T1 configuration

When using the internal SoftMux on ISDN-PRI/T1, select ‘*Current Network: ISDN-PRI/T1*’, enter *‘ISDN-PRI/T1 Settings’* and specify needed parameters. For details, follow the instructions in chapter ‘Terminal Settings’,‘ISDN-PRI/T1 Settings’ in this guide.

External Network configuration

When using external network equipment such as an external IMUX or terminal adapters for special networks, select ‘*Current Network: External*’ and set your network specific parameters via the ‘*External Network Settings*’ option. For details, follow the instructions in chapter ‘Terminal Settings’,‘External Network Settings’ in this guide.

Language and Dual Monitor configuration

• To select a different language, select ‘Terminal Settings’, ‘Language’.

• If you are using two monitors, ‘*Dual monitor*’ should be selected On in the ‘Video Output’ menu.

• The Vision 5000 is now configured and ready to make a call.

Environmental considerations

This section explains how to carry out basic adjustments and simple tests to ensure that you send and receive the best possible image and audio quality when using your Vision 5000.

Iris control and lighting

By default the Vision 5000 camera will use an automatic iris to compensate for changes in lighting. In addition to this feature you may further assist the Vision 5000 to maintain the best possible image quality by paying special attention to environmental lighting and background colours as described below. Remember the Vision 5000 will send live images of yourself *and* your immediate surroundings.

- Avoid direct sunlight on the subject matter i.e. yourself, the background or onto the camera lens as this will create harsh contrasts.
- If light levels are too low you may need to consider using artificial lighting. As above avoid direct illumination of the subject matter and camera lens.
- When using artificial lighting, ‘daylight’ type lamps will produce the most effective results. Avoid coloured lighting.
- Indirect light from shaded sources or reflected light from pale walls, often produces excellent results.
- Avoid harsh side lighting or strong light from above, for example: strong sunlight from a window or skylight, as this may put part or all of the subject matter in shadow or cause silhouetting.
- If you still have problems with the iris and lighting, manual adjustment of the camera parameters might help - see *‘Camera adjustments’* in *‘Video Input’* menu.
- Dim scenes can also be improved by manually adjusting the camera brightness setting.

Background

The appearance of the picture background is very important but easily overlooked. It is important to remember that the camera also shows what’s behind you when in a videoconference. To ensure a suitable background we recommend you consider the following:

- Use a neutrally coloured background with a medium contrast and a soft texture, e.g. a plain curtain with no heavy patterns or strong colours that may adversely tint the whole scene.

- Avoid moving backgrounds, for example: curtains in a draught, moving objects, or people walking behind you, as this may both reduce image quality and distract the attention of the calling party.
- Do not place the camera facing a doorway.

Brightness control

For adjusting brightness, colours or other settings of the TV monitor, you must use the TV monitor's own remote control. Adjust the TV monitor to suit the conditions of the conference room.

The TV monitor has an on-screen menu and is very easy to use. For more information on configuring the TV monitor refer to the user manual for that unit.

Loudspeaker volume

The audio system will use the loudspeakers built into the TV monitor or the Natural Audio module (if installed). The volume of the audio system is controlled by the Volume Control keys on the Vision 5000 hand-held remote control.

The default volume level can be set by adjusting the volume on the TV monitor using the TV monitor's own remote control.

Guidelines for setting up videoconferencing rooms

The following are a set of guidelines to consider when either building a video conferencing room, or using an existing room for videoconferencing.

Lighting:
- Low Contrast desired for light intensity. No dark spots.
- Intensity @ table 800 - 1400 Lux as measured with an Incident light meter.
- Intensity @ back wall: minimum ½ of that measured at table, Max ¾ of that measured at table.
- Colour temperature: Depends upon wall color and camera. Typically 3200 - 3600 degrees Kelvin
- Block sunlight from entering room.

Seating Area (Table):
- Should allow all participants to see Monitors.
- Should allow camera to “see” all participants.
- Should allow participants to see each other.
- Should allow 3 linear feet for each participant.
- Non-shiny non-patterned preferably light grey surface (if table used).

Walls:
- Colour: Depends on participants skin tones, cameras, and lighting. Generally high contrast colour desired . Light blue is commonly used.
- Acoustically reflective surfaces (such as glass or concrete) should be covered with curtains or sound treatment.

Audio:
- Noise Floor Maximum 50dBC.
- Noise Floor preferred less than 44dBC.
- Reverb Time .3 to .5 sec.
- Absorption Coefficient .25 to .45.
- No flutter echoes.

Ventilation:
- Keep in mind Noise Floor.
- 300W (1024 BTU/HR) per person.
- 400W (1365 BTU/HR) for equipment.
- 40 W (137 BTU/HR) for each Fluorescent tube (maybe).
- Intake and exhaust should be located near equipment.
- Velocity = Noise. Therefore keep velocity of air low.

Monitor Size:
- Optimal distance from monitor for viewing people is about 7.5 x monitor size.
- Optimal distance from monitor for viewing documents is about 3.25 x monitor size.
- Viewing Angle: 45 degrees off axis maximum.

Room:
- Should be located away from Noise
- Should not have windows
- Doors should be located off camera - A “diamond” shape gives best viewing angles, camera angles, and can seat the most people.

Lighting:

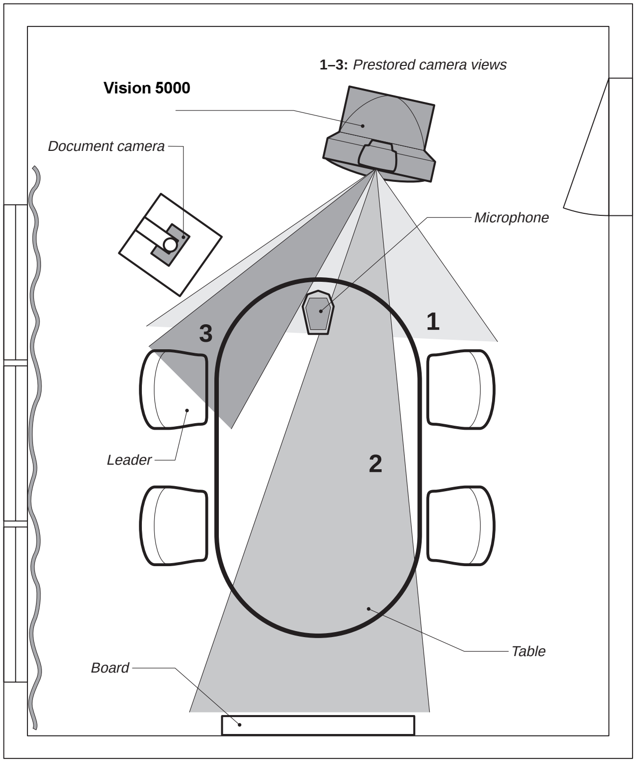
Type	Temp
Bright Daylight near equator	10 000K to 30 000K
Metal Halide Lamp	10 000K
Verilux Reptile Daylight	6 500K
Daylight White Fluorescent	6 300K
Verilux Full spectrum Fluor	6 280K
Verilux Reptile D-light	5 600K
Average Daylight	5 500K
Cool white	4 200K
Lite White	4 150K
3500K Fluorescent	3 500K
Warm White	3000-3200K
100W Light bulb	2 850K
Candlelight	1 900K

Source	Intensity
Sunlight	30 000 to 100 000Lux
TV Studio	2000Lux
Average office	400Lux
By my Computer	600Lux
Moonlight	1Lux

Note: As measured with an incident light meter.

How to prepare a typical room for videoconferencing

The diagram below shows a typical room designed to obtain the best results when using the Vision 5000.



The microphone should be placed at the front of the table to ensure that all speech will be detected. The best position for the microphone is at least 2 meters (6.5 feet) in front of the Vision 5000 on a plain, flat table with at least 0.3 meters (12 inches) of table in front of the microphone.

The document camera should be close to the leader or a designated controller of the document camera for ease of use. (Remember to arrange all the peripherals so that one participant can reach each of them to point, change the display, tape, and so forth).

The camera supports up to 15 pre-stored camera positions. The illustration shows three possible camera positions. One of all the participants, one of the whiteboard and one of the main speaker. The remaining presets are then available for other peripheral equipment, for example: a VCR.

Position the Vision 5000 in such a way as to avoid the possibility of somebody inadvertently walking into the camera's field of view when entering the room. Other than the conference participants there should be no moving items in the sent image.

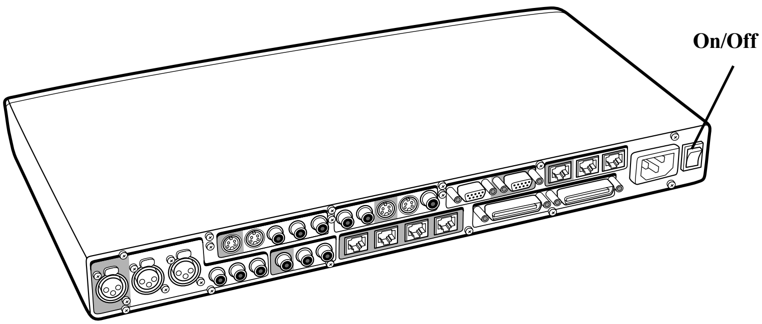
Getting started

System start-up

Your Vision 5000 should be in standby mode, if so pressing any key will wake up the system.

If the Vision 5000 does not respond: turn on the system by using the On/Off switch located at the rear of the Codec, see figure below. After a few seconds you should see a start-up message on the monitor.

If this does not help, check if your monitor is switched on. To switch your monitor on you normally push the power button in front of the monitor (depending on monitor type).



On-screen help

Press the HELP key to get help.

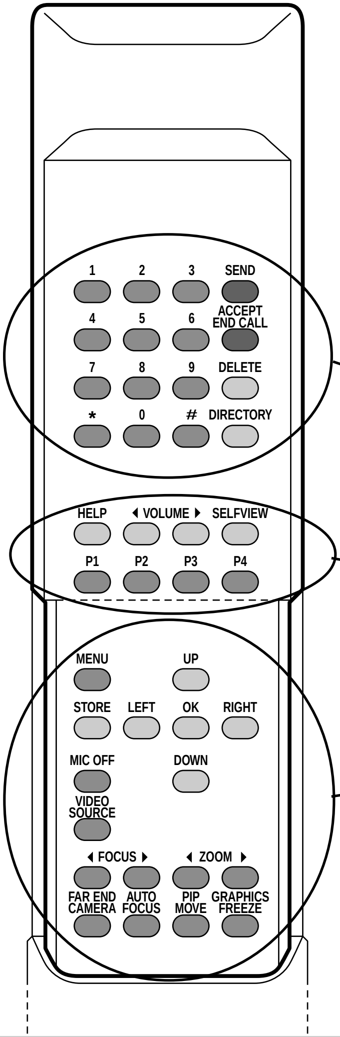
The help system has two formats:

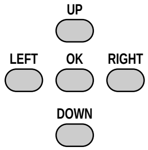
1. A separate Help Menu.
2. Context sensitive help, i.e. HELP relative to wherever you are in the menu system.

Basics

The Vision 5000's most commonly used functions are accessible directly from the remote control by single key presses. In addition, the user interface is represented by on-screen boxes which take the form of menus and lists. Individual items within the menus and lists can be selected by moving a white highlighter bar to the desired option. Use the cursor keys (shown below) to move the highlighter bar to the desired option and use the 

key to select.





To confirm the selection press 

.

All functions are accessible using the keys on the remote control, these keys can be divided into three functional groups (see figure).

To make a call you only need to use the ***Dialling keys***. The twelve number keys, (0-9), #, * operate in the same way as on a modern push-button telephone.

The ***Control keys*** are probably the most frequently used keys during a call, allowing you to switch between pre-stored camera positions, control the volume, select self-view and obtain help.

The ***Hidden Control keys*** are protected by a sliding panel and facilitate a more advanced use of your Vision 5000. With these keys you may enter the menu system to change parameters, control the camera, set new pre-stored positions and so forth.

Making and ending calls

Making a call

The Vision 5000 has its own internal software controlled inverse multiplexer, SoftMux and uses ***Intelligent Call Management (ICM)***. This enables you to dial to other videoconferencing equipment, phones and mobile phones without needing to use a prefix. ICM provides you with on-screen, real-time feedback on the progress of a call. You will, when calling to videoconferencing equipment, obtain a connection on as many channels as possible.

External Networks
ICM is not available when using an external IMUX or when connecting via special networks.

Ending a call
Switching off the monitor(s) will not disconnect a call. To disconnect a call you should press the ACCEPT END CALL key.

Video call

To make a video call, enter the number of the unit you wish to call using the Dialling keys and press SEND.

Example: 12345678 + SEND , 12345678 = Number

The system will, by default, try to connect using 6 channels and BONDING. If the requested number of channels cannot be established, the system will establish a connection on as many channels as possible (some limitations depending on remote system).

The SoftMux supports high reliability and includes the unique Downspeed feature. If channels are dropped during a meeting, Downspeeding automatically maintains the connection without interrupting the call in progress.

If you are calling to a unit that does not support more than 2 channels, the Vision 5000 will connect on 2 channels. When dialling to an analogue telephone, you will also connect without using a prefix. Due to ICM you should never need to use any special prefix.

To force a special number of channels, see '*Special Call Prefixes*'.

The default number of channels may be changed , see '*Advanced ISDN settings*' in '*Advanced use*'.

Dialling two numbers

Sometimes (especially calling to and within the USA) it is necessary to dial both ISDN numbers when making a video call using 2x64 kbps or 2x56 kbps. Type in the first number followed by ** and edit the automatically inserted second number by using the DELETE key and the number keys.

Example: 12345678 ** 12345679 + SEND

Restricted call

A restricted call is a call to a 56 kbit network. By default the system will dial an unrestricted call (a call to a 64 kbit network). To force a restricted call, add a '#' at the end of the number being dialled.

Example: 12345678# + SEND

Telephone call (SoftMux only)

To force a telephone call, press ** and then enter the number.

Example: **12345678 + SEND

Special call prefixes

Default call type is **#6*** which means 6B BONDING. If you want to force another call type, you can use one of the prefixes below. If you want your system to always dial another call type, see '*Default Call Type*' in '*Advanced ISDN Settings*'.

Prefix	Call Type
#12*	12B call (BONDING), 768 kbps (PRI and Ext.network only)
#8*	8B call (BONDING), 512 kbps
#6*	6B call (BONDING), 384 kbps
#5*	5B call (BONDING)
#4*	4B call (BONDING), 256 kbps
#3*	3B call (BONDING)
#2*	2B call (H.221), 128 kbps
#1*	1B call (H.221)
#92*	2B call (BONDING)
#91*	1B call (BONDING)
#81*	1xH0 channel call (PRI only)
**	Telephone Call

Example: If you want to dial a 4-channel call, you can dial #4* 12345678 + SEND

Accept/end call

To answer a call, press the SEND or the ACCEPT/END CALL key. Manual answer of a call is needed if the autoanswer facility is switched off. See *'Utilities'* in *'Advanced use'*.

To end a call, press the ACCEPT/END CALL key.

Correcting keying mistakes

To delete the last digit (or character) entered, press the DELETE key.

Last number redial/using the call directory

To get access to your list of pre-stored numbers (up to 99 entries) and the last number dialled, press the DIRECTORY key.

To select a number from the list, type the two-digit entry number or use UP and DOWN to move up/down, or press LEFT and RIGHT to move one page up/down.

To dial the selected number press SEND.

Example: You wish to dial the number stored at entry number 03.

Press DIRECTORY + 03 and SEND .

If you want to make changes to the number before dialling, press OK instead of SEND.

To program numbers and edit your directory list, see '*Edit Directory*' in '*Advanced use*'.

General use

Adjusting volume

Press the ◄ VOLUME ► keys to adjust the volume level. An on-screen indicator will show the current level.

> **Tip**
> It is important that you use the Volume control keys and not the monitor remote control. For best performance set the volume level on the monitor initially using the dial-tone as a reference level and from then on use only these volume keys. Too high a volume setting may result in echo being experienced by the remote side of a video conference.

View outgoing video

Press the SELFVIEW key to see your own picture (the outgoing video during a call).

If you have a single monitor system, the first button press provides you with your own picture (selfview) in Picture-In-Picture. One more key press will provide you with your selfview in full screen size. The next press will remove your selfview from the monitor.

Press the PIP MOVE key to move the Picture-in-Picture to different corners of the screen.

> **Automatic selfview**
> To help you see your selfview when adjusting camera positions, your selfview will always appear in PIP when you move your camera (if Auto-PIP is off, see '*Video Output*' in '*Advanced use*')

If you have a dual monitor system, pressing the SELFVIEW key will toggle between your selfview and the last sent or received still image on the dual monitor.

Microphone on/off

To switch your microphone on/off during a call, press the MIC OFF key. An on screen indicator will appear when the microphone is off.

Pressing MIC OFF will mute audio inputs Mic1-3 and Audio4. It will not mute audio input from AUX and VCR (Audio input 5&6).

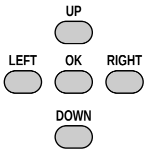
Moving the picture-in-picture (PIP)

Press the PIP MOVE key to move the Picture-in-Picture to different corners of the screen.

Controlling the Main Camera

Moving camera

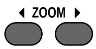
To move the Main Camera, use the Camera Position keys, — you must be outside the menu system to do this.



Whenever you use the Camera Position, Focus or Zoom keys to control the Main Camera, a Picture-In-Picture (PIP) will appear on the screen to show your image (provided the Auto-PIP feature is enabled and you are not using a dual monitor system).

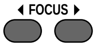
Zooming camera

To zoom in/out with the Main Camera, use the Zoom keys:



Focusing camera

To manually focus the Main Camera, use the Focus keys:



The Main Camera is set for autofocus by default. An on screen indicator will appear whenever autofocus is On.

If the Main Camera is moved (pan/tilt/zoom), autofocus will be switched On automatically for 5 seconds.

Camera Tracking

Before using camera tracking, presets P7 (Mic1), P8 (Mic2) and/or P9 (Mic3) must be stored using Video Input #1 as the video source.

Example:

The camera position stored at P7 must be related to Mic1, therefore all participants which are located closest to Mic1 should be included in the P7 camera position etc.

When camera tracking is activated and a person close to Mic1 speaks, P7 will be automatically selected.

If a person close to Mic1 has a conversation with a person close to Mic2, the camera will adjust to a camera position which includes both persons.

Start camera tracking by selecting # in the ‘Video Source’ menu (see the ‘*Selecting video sources*’ section for starting/stopping camera tracking).

When activating another video source (e.g. document camera), camera tracking will temporarily be disabled until you select MainCam or a MainCam preset.

Pressing 

will temporarily disable camera tracking.

A Voice Detector makes the system more tolerent against noise and the camera will normally not be moved by noise like paper shuffling etc.

The camera tracking speeds may be altered in the ‘*Video Input*’ menu. See ‘*Advanced use*’ for further details.

Selecting video sources

```
======== Local Video Source =======
1 - MainCam
2 - Video2
3 - Video3
4 - Video4
5 - Video5
0 - View still image
# - Start Camera Tracking
```

> **Note**
> The Start Camera Tracking entry will be greyed out if not using the standard Main Camera.

To switch between the 5 possible video inputs, press the **VIDEO SOURCE** key and a number between 1-5, or move the highlighter bar to a source and press **OK**.

Send still images by moving the highlighter bar to a source and press **GRAPHICS FREEZE**.

To view the last sent or received still image, select 0.

To name a video source and to adjust the camera settings, see *'Video Input'* in *'Advanced use'*.

Enable/Disable Camera Tracking
Enable Camera Tracking by pressing/selecting #. An on-screen indicator 'CamTrackOn' will appear.

Disable Camera Tracking by:

- moving the camera manually
- activating a MainCam preset when MainCam is already activated.
- disconnecting the call.

An on-screen indicator 'CamTrackOff' will appear.

Selecting audio sources

All audio sources are by default active. Connect an audio source and it is ready to use. For level adjustments refer to '*Audio set-up*' in '*Advanced use*'.

Presets

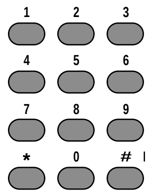
The preset buttons enable you to pre-store up to ten different settings. Each preset is able to store:

- Video source
- Camera position, pan/tilt/zoom/focus (if Main Camera)
- Brightness (if Main Camera)
- Audio source selection (see 'Audio set-up' in 'Advanced use')

Selecting presets

To select a pre-stored camera position, audio and video source, use the keys P1 P2 P3 P4 or press OK until LocalCamera appears as an on screen indicator and use 0-9 to activate P0-P9 presets.

P1-P4 are the same presets as when pressing OK and 1- 4.



Storing presets

To store the current camera position, audio and video source:

- Press STORE once.
- Then press one of the keys P1 P2 P3 P4 or a key 0-9.

Sending/receiving graphics

When a still image is sent, received or requested, it will be stored in the graphics memory.

One high-quality image (4xCIF) can be stored in memory. When a new image is sent or received, the old image will be overwritten.

Sending a still image

- Press GRAPHICS FREEZE. The outgoing video is frozen when 'Freeze' is displayed on the screen. The video remains frozen until the key GRAPHICS FREEZE is pressed again (not if calling to a dual monitor system).

Note
If a still image from another video source is sent, please check your '*Presentation Settings*'. See below.

Dual Monitor
Using a dual monitor system and with '*Dual Monitor: On*' selected in the Video Output menu, the still image is automatically shown on the dual monitor until SELFVIEW is pressed. Use SELFVIEW to toggle between selfview and still image on the dual monitor.

- To send a still image from another video source (e.g. the document camera), press VIDEO SOURCE, use UP and DOWN to highlight the video source and press GRAPHICS FREEZE. See '*Presentation Settings*' below for automatic setup of this operation.

Requesting a still image

Press FAR END CAMERA until the '*FarEndCamera*' on screen indicator is displayed.

- Press GRAPHICS FREEZE. The still image is automatically displayed, press any key to return to normal view (single monitor).

Dual Monitor
Use SELFVIEW to toggle between selfview and still image on the dual monitor.

- To request a still image from another video source, press VIDEO SOURCE, use UP and DOWN to highlight the video source and press GRAPHICS FREEZE.

Viewing a still image

- Press VIDEO SOURCE and 0 to view the last sent or received still image.
- Press any key to return to normal view.

> **Dual Monitor**
> Use SELFVIEW to toggle between selfview and still image on the dual monitor.

Receiving a still image

A received still image will automatically be shown on your screen (if Auto-Display Still Image is On, see section ‘*Video Output*’) and will be removed by pressing any key. If Auto-Display Still Image is Off, press VIDEO SOURCE and 0 to view the still image.

> **Dual Monitor**
> The received still image is automatically shown on the dual monitor. Press SELFVIEW to return to selfview.

To customize your still image transfer options refer to the ‘*Presentation Settings*’ section in ‘*Advanced use*’.

Far end camera control (FECC)

Press the FAR END CAMERA key until the '*FarEndCamera*' on-screen indicator is displayed.

For this feature to operate the remote side must support 'Far end camera control' (H.281).

Whilst activated you will be able to control the remote side's camera (pan/tilt/zoom/focus) and presets.

To control the remote camera use the keys below:

UP, LEFT, OK, RIGHT, DOWN for pan/tilt, and ◂ ZOOM ▸ for zooming, ◂ FOCUS ▸ for focusing.

Remote presets can be activated by pressing the keys P1 P2 P3 P4 or the keys 0-9 to activate presets P0-P9.

Selection of remote videosources is achieved by pressing VIDEO SOURCE when in FarEndCamera mode and selecting the desired video source from the menu.

> **Note**
> You cannot store presets on the remote side and some units do not support ten presets.

To prevent others from controlling your camera,— select '*Far End Camera Control:Off*' in '*Utilities*' '*Advanced use*'.

Advanced use

General

Overview

The Vision 5000 menu system can be used to:

- Set default settings for your system.
- Select available functions and utilities.
- Obtain information and help. Help is available for every topic in the menu system. Just press HELP and context specific help will be provided.

> **Tip**
> In the following menu diagrams the default settings are shown in **bold**.

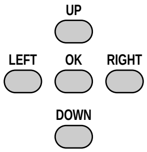
To enter/leave the menu system

Press the MENU key to enter the menu system.

You may leave the menu system at any time by pressing the MENU key.

Navigation

To navigate through the menu system, use the cursor keys to move the highlighted bar to the desired sub-menu or choice.



To confirm a highlighted selection, press 

.

To see the previous page, press the 

key or select '*Previous Menu*'.

Menu structure

The following sections detail the menu structure. Refer to 'Menu structure' at the front of this manual.

Main menu

To enter the menu system and the main menu, press the 

key.

```
============ Main Menu =============
Call Quality        Audio Setup
Edit Directory      Video Input
Utilities           Video Output
MCU Services        Terminal Settings
Exit Menu
```

All submenus are explained below.

Call quality

The Call Quality menu enables you to control the preferred quality of your call.

```
========== Call Quality ==========
Audio:         Off     Normal  High
Video:         Off     On
Advanced Settings
Previous Menu
```

Note
Due to actions or limitations at the remote side you may not always be able to set the selections you want.

Audio

`Audio Off`	Switches the audio OFF at both sites.
`Audio Normal`	This will provide you with the best audio/video combination for different bandwidths. For 1-2 channels, G.728 will be selected, else G.722.
`Audio High`	High audio quality (G.722) regardless of bandwidth.

Video

`Video Off`	Switches the video off at both sites.
`Video On`	Switches the video on at both sites.

If '*Video: Off*' is selected when receiving an incoming call, no video will be transmitted during the call.

Advanced call quality

```
====== Advanced Call Quality =======
Audio:          G711 G722 G728 Auto
Video Mode:     H261 H263 Auto
Quality:        Motion    Auto
                Sharpness
Resolution:     QCIF      CIF
Channels:       1         2
Status Format: Basic     Advanced
Previous Menu
```

Audio

G711	Normal quality audio (telephone quality, 3.1 kHz).
G722	High quality audio (7 kHz).
G728	Compressed normal quality audio leaving more bandwidth for video.
Auto	Optimized audio/video quality depending on bandwidth available.

Video Mode

H261	Normal video compression and decompression.
H263	Bandwidth efficient video compression and decompression.
Auto	Optimized video quality depending on bandwidth available.

Quality

Motion	Smooth motion video is prioritized for sent picture (increased framerate).
Auto	Optimized video quality depending on motion and sharpness.
Sharpness	Sharp video is prioritized for sent picture (decreased framerate).

Resolution

`QCIF`	Low resolution video (176 x 144 pixels)
`CIF`	High resolution video (352 x 288 pixels). The recommended choice.

Channels

Enables you to choose whether to use 1 or 2 channels at any time during an H.221 call. We recommend that you use 2 channels for best performance.

Status Format

Provides call quality feedback on the status line during call setup.

`Basic`	Video off/on, Audio off/normal/high
`Advanced`	Video H261/H263 & CIF/QCIF, Audio G728/G722/G711, LED's in front of codec will be active.

> **Tip**
> You may change these settings during a call (dependent on capabilities of remote system).

Edit directory

```
========= Edit Directory =========
Alphabetic Sort:  Off    On
Add New Entry
Edit/Delete Entry
Store Last Number
Previous Menu
```

The directory is a local phone book that stores up to 99 directory entries (number and name). A number may consist of the digits 0 through 9 and the symbols * and #.

When the system is receiving an incoming call, the incoming number is compared to the numbers in the directory list. If the number (with its corresponding name) is found in the directory, the name will be displayed instead of the number.

In addition, alphabetic sorting of the directory is also available.

Alphabetic Sort

When '*Alphabetic Sort*' is '*On*', the directory will be sorted alphabetically. The index numbers will remain unchanged. Shown below is an example with '*Alphabetic Sort:Off*':

```
=========== Directory ===========
00 Last Number Dialled
01 John
02 Mary
03 Peter
04 Annie
05 555 1212
06
07
```

Shown below is the same directory with '*Alphabetic Sort:On*'. Last Number Dialled will always be displayed first.

```
=========== Directory ===========
00 Last Number Dialled
05 555 1212
04 Annie
01 John
02 Mary
03 Peter
06
07
```

Add New Entry

When selecting '*Add New Entry*', the first empty directory entry is selected and the edit menu is shown.

```
===== Edit Directory Entry 04 =====
Name:      ________________
Number:    ________________________
   2nd:    ________________________
Previous Menu        Clear Entry
```

1 Select '*Name*' and press OK to edit. To enter a character move the cursor to the desired character and press OK. To finish editing and save the name move the cursor to 'Store' and press OK. You may use the DELETE key to delete the last character.

2 Select '*Number*', key in the number and press OK. Specify only one number. If two numbers are required, both numbers should be specified (2x64 or 2x56 calls).

To make a call using your directory number, press DIRECTORY to access the directory list.

Edit/Delete Entry

When selecting '*Edit/Delete Entry*' the Edit Directory menu is shown.

```
========= Edit Directory =========
01 John
02 Mary
03 Peter
04 Annie
05 555 1212
06
07
08
Number:

Press OK to edit, DELETE to delete
```

When pressing OK, the '*Edit Directory Entry*' menu is shown. See chapter '*Add New Entry*'.

When pressing DELETE, the selected entry is deleted.

Store Last Number

Use this to store the last number dialled into your directory.

When selecting '*Store Last Number*', the first empty directory entry is selected and the '*Edit Directory Entry*' menu is shown with the number dialled already added.

Utilities

```
============ Utilities ============
Autoanswer:                Off    On
Do Not Disturb:            Off    On
Far End Camera Control:    Off    On
Hotline:                   Off    On
Automatic Call-up:         Off    On
MCU Status Line:           Off    On
Systemname:             _____________
Presentation Settings
Diagnostics
Previous Menu
```

Autoanswer

If autoanswer is set to Off, you must manually answer all incoming calls by pressing the SEND or the ACCEPT END CALL key. When Autoanswer is set to On, the system will automatically answer all incoming calls after the first ring.

Do not disturb

Do Not Disturb On will remove all audible and visible indications of incoming calls. The caller will hear a busy ringing tone when calling this unit. The function can be activated while the system is not in a call. Pressing any key will turn off Do Not Disturb.

Far end camera control

When Far End Camera Control is On, the other side will be able to:

- Control your camera (if controllable)
- Select your video sources
- Activate your presets
- Request still images

When set to Off none of the four features above can be accessed by the other side, however you will still be able to control the remote side.

Hotline

When the hotline function is On, pressing the SEND or the ACCEPT END CALL key will automatically dial the number stored in index 01 in the Directory. When Hotline is active you cannot use the number keys for dialling. You may still use the Directory to dial any of the other pre-stored numbers.

Automatic call-up

When the automatic call-up function is On, the connection of the RTS line to the CTS line on Data Port 2 will initiate an out-going call to the number stored in entry 01 in the Directory (reserved for special applications).

MCU status line

During an MCU conference, a status line is displayed by default which provides user information about the conference. To remove this status line, select '*MCU Status Line: Off*'.

System Name

Identifies the system during an MCU conference call, when using the Web-interface and when the codec is acting as an SNMP Agent.

Presentation Settings

This menu allows setup of still-image/graphics transfer.

```
====== Presentation Settings ======
Presentation Mode: Normal Preview
Still image source:
    Current Video1  Video2
    Video3  Video4  Video5
Previous Menu
```

Presentation Mode: Normal

To send a still-image immediately after pressing GRAPHICS FREEZE, select '*Presentation Mode: Normal*'.

Presentation Mode: Preview

To preview your image before it is transferred as a still-image, select '*Presentation Mode: Preview*'. When pressing GRAPHICS FREEZE you will be allowed to view your image, e.g. from the document camera, before sending it as a still-image by pressing GRAPHICS FREEZE again.

Still image source

To select a default still image source, e.g. the document camera connected at video input 3, select '*Still image source: Video3*'. When pressing GRAPHICS FREEZE the system will switch to the chosen video input and send a still image from this video input. After the image is sent the system will switch back to the original video input.

To send a still image from your current video source, select '*Still image source: Current*'.

Diagnostics

Allows testing of individual system components and displays the current system settings.

```
=========== Diagnostics ===========
Local Testpicture:    Off    On
Power Up and System Info
Call Status
Test Subsystem
View Current Settings
Previous Menu
```

If '*Local Test Picture*' is set to '*On*', a test pattern is shown on the monitor. This test picture remains on the monitor until '*Local Test Picture*' is set to '*Off*' or the unit is switched off and then on again.

Power up and system info

The Power Up and System Info provides the information displayed on the monitor when the unit is first turned on. In addition the *Hardware Serial Number* of your unit (used for software upgrade) and the model numbers of the hardware modules used are also displayed (use UP and DOWN keys to scroll through the list).

Test subsystem

You can test the different subsystems of the Vision 5000.

```
=========== Test Subsystem ===========
Test All            Test Video System
Test Network        Test Audio System
Previous Menu
```

The system performs a check on its hardware to determine internal hardware integrity. Test Network is useful when you want to check if your network connection is active.

View current settings

This window will display all the system settings. Use UP and DOWN keys to scroll through the list.

Call status - BRI

Comprehensive information about the call progress is available through the Call Status window.
This window indicates the various states each B-channel transitions through whilst establishing a connection. Each channel will transition through the following states:

Status - BRI	Status - PRI	Comments
Idle		the channel is idle
Calling	Call	when calling — the network has acknowledged the call
Connected	Conn	when connection is established
Sync	Sync	when the channels are synchronised
Active	Act	when all available channels are connected
Releasing	Rlng	waiting for the network to confirm a release of the call
Released	Rel	when disconnected - the network has acknowledged the disconnection

```
=========== Call Status ===========
Outgoing BONDING call
1-B1 Active          12345800
  B2 Active          12345800
2-B1 Active          12345802
  B2 Active          12345802
3-B1 Active          12345804
  B2 Released        12345804   17
4-B1 Idle
  B2 Idle
```

Press MENU +1 to bring this menu up when not in the menu system.

The numbers used to call out to the remote site are shown in the window. If an error occurs a cause code will be displayed on the right hand side of the window.

A list of the most common ISDN cause codes is provided at the end of this chapter.

Call status - PRI

The PRI interface has 23 data channels and 1 signalling channel. The Vision 5000 uses up to 12 of these channels. To make room for the necessary information, the screen is divided into 2 pages. The first page will show channel status and cause codes.

```
======== Call Status-PRI ========
BONDING call to 004717117790
01          09          17 Rel 18
02          10          18 Act
03          11          19 Act
04          12          20 Act
05          13          21 Act
06          14          22 Act
07          15          23 Act
08          16 Rel 18
```

The channel status information will be shown as abbreviated text. For a description, see '*Call Status BRI*'.

The second page is accessed using the UP and DOWN keys. This page will show the last 7 digits of the numbers dialled for each channel.

```
======== Call Status-PRI ========
BONDING call to 004717117790
01          09          17 7117804
02          10          18 7117798
03          11          19 7117798
04          12          20 7117796
05          13          21 7117796
06          14          22 7117790
07          15          23 7117790
08          16 7117804
```

The example above indicates an outgoing call on 8 channels where the 2 last channels have been released due to cause code 18, 'No user responding'.

Cause codes

The most common cause codes (for ISDN) are:

```
1 -     Unallocated (unassigned) number
2 -     No route to specified transit network (WAN)
16 -    Normal clearing
17 -    User busy
18 -    No user responding
21 -    Call rejected
28 -    Invalid number format (incomplete number)
29 -    Facility rejected
31 -    Normal, unspecified
34 -    No circuit/channel available
41 -    Temporary failure
58 -    Bearer capability not presently available
65 -    Bearer service not implemented
69 -    Requested facility not implemented
81 -    Invalid call reference value
88 -    Incompatible destination
100 -   Invalid information element contents
102 -   Recovery on timer expiry
127 -   Internetworking, unspecified
```

MCU services

A Multipoint Control Unit (MCU) enables several sites to participate in the same conference.

An MCU conference can have different modes: Voice Switched and Continous Presence with or without Chairman control.

Voice Switched means that the image of the person currently speaking will be broadcast to all the other conference participants. This will remain the case until another participant starts to speak. Voice Switched requires a certain amount of discipline from all participants.

Continous Presence shows several participants on the same screen at the same time.

Chairman Control functionality enables one participant to control the meeting by selecting which of the conference participants is to be broadcast to the other participants.

Tip
During an MCU conference, a status line is displayed by default which provides user information about the conference. To remove this status line, select '*Utilities', 'MCU Status Line: Off*'.

```
========== MCU Services ===========
Request Floor     Chair Control
Release Floor     Terminal ID
Previous Menu
```

Request floor

When requesting the floor your unit will try to force the MCU to broadcast its own video to all other participants in the conference. In other words it will try to put you 'On Air'. If the MCU conference has a chairman, a floor request is sent to the chairman.

You will remain 'On Air' until either you select '*Release Floor*' or the chairman decides to release the floor to another participant.

Release floor

You choose '*Release Floor*' when you want to stop being 'On Air'. You should do this when you no wish to make the floor available to the other participants in the conference.

Terminal ID

Allows you to see the site numbers of other sites connected in the conference. To find out who the participants actually are at each site, the participants will need to identify themselves by their site number.

Chair control

You select '*Chair Control*' and '*Take Chair*' to assume the role of chairman of the 'meeting'. Chair Control provides considerable conference management functions. In order to make use of Chair Control features the MCU must support Chair Control (H.243).

As chairman you may control which site you and the other sites see.

```
========== Chair Control ==========
Take Chair          View Site #
Release Chair       End View
Floor To Site #     Disconnect Site #
Release Floor       Terminate Meeting
Previous Menu       Short Menu
```

Take chair

Allows you to request chairmanship of the conference. If no one else is currently chairman the MCU will give you the chair.

Release chair

Allows you to relinquish the privileges of chairmanship of the conference.

Floor to site

Allows the chairman to select which of the conference participants is to be broadcast to all other participants.

Release Floor

Allows the chairman to release the floor.

View site

Allows you to view any participant in the conference other than the participant currently ‘On Air’.

End view

Allows you to stop viewing the site previously chosen with ‘View Site #’, and returns your view to the site that is currently ‘On Air’.

> **Tip**
> ‘*View Site*’ and ‘*End View*’ can be used by all conference participants.

Disconnect site

Allows the chairman to disconnect any participant in the conference.

Terminate meeting

Allows the chairman to terminate the conference altogether.

Short menu

```
 ============ Short Menu ============
1-FloorToSite  2-ViewSite  3-Release
```

> Press MENU +2 to bring this menu up when outside the menu system.

This is a transparent menu for the chairman of a video conference. ‘*FloorToSite*’ and ‘*ViewSite*’ are explained above. ‘*Release*’ has the same functionality as ‘*Release Floor*’ after you have selected ‘*FloorToSite*’. ‘*Release*’ also has the same functionality as ‘*End View*’ after you have selected ‘*ViewSite*’.

Audio setup

```
=========== Audio Setup ===========
Inputs
Outputs
Echo Control
Audio Levelling (AGC)
Alert Tones & Volume
Restore Audio Defaults
Previous Menu
```

Audio Inputs

```
============= Inputs =============
Mic1:                Off     On
Mic2:                Off     On
Mic3:                Off     On
Audio4:              Off     On
Audio5(AUX):         Off     On
Audio6(VCR):         Off     On
Mix mode:            Fixed   Auto
Level Settings
Previous Menu
```

By default, all inputs are enabled. The user just plugs in an audio source and it is active. Audio inputs that are On will automatically be mixed. Select Off to prevent audio/noise from unused inputs or if you want to disable a specific input. The activated audio sources are stored on presets.

Mic 1,2 and 3 are intended for electret type microphones. The microphone inputs are balanced with 24V phantom power.

Audio input 4 is intended for connection to an external microphone amplifier or an external fixed mixer.

External mixer
When using an external mixer, it is very important that this is a fixed mixer; automatic, smart and other types of adaptive mixers will cause malfunction of the echo canceller.

Audio input 5 is intended for connection to external playback devices or to telephone add-on hybrids. As there is no acoustic echo canceller on this input it should not be connected to any microphones. The audio entering this input will be heard from the local speaker.

Audio input 6 is intended for connection to a VCR. It can also be connected to other external playback devices. As there is no acoustic echo canceller on this input it should not be connected to any microphones. The audio entering this input will be heard from the local speaker.

Mix Mode

'*Auto*' automatically adjusts the weighting of each microphone to obtain the best possible audio and minimizes the background noise. '*Auto*' will also attenuate the VCR audio when someone talks into a microphone. '*Fixed*' will keep a constant weighting of all microphones.

Level Settings - Inputs

```
Audio level: |||||——|—— Mic1
```

```
========= Level Settings =========
 Mic1:                ||—— +3.0dB
 Mic2:                ||—— +3.0dB
 Mic3:                ||—— +3.0dB
 Audio4:              ||||— +9.0dB
 Audio5(AUX):         ||||— +9.0dB
 Audio6(VCR):         ||||— +9.0dB
 Previous Menu
```

Adjust the audio input levels according to the parameters of the external audio equipment connected. These levels should be adjusted when installing new audio equipment only. The audio level for the current audio source is displayed in the indicator area. The audio level indicator will make it easier to set correct input level settings. The input level should be adjusted so that the average level reaches the preferred level marker.

The audio inputs are adjustable in steps of 1.5 dB from 0 dB to 22.5 dB.

The default levels for Mic 1,2 and 3 are set for use with an Audio Technica AT871 microphone in an average videoconferencing room. The gain can be adjusted correctly for a wide range of microphones.

A few examples of microphone levels are:

Crown PCC-160	+3dB
Audio Technica AT851R	+7dB
Tandberg Audio Science	+12dB

Audio 4, 5 and 6 are set to a default level which is adhered to by most manufacturers of audio-visual equipment and is a level which most audio-visual equipment (CD-players, VCRs) will work at.

Audio Outputs

```
============= Outputs =============
Out1:                Off     On
Out2(AUX):           Off     On
Out3(VCR):           Off     On
Level Settings
Previous Menu
```

Audio out 1 is intended for connection to Tandberg Natural Audio module, televisions or audio amplifiers with loudspeakers.

Audio out 2 is intended for connection to audio recording equipment or to a telephone add-on hybrid. The signal is a mix of audio from both the remote and local side (not from Audio in 5).

Audio out 3 is intended for connection to a VCR or other recording equipment. The signal is a mix of audio from remote side and local side (not from Audio in 6).

> **NOTE**
> Never connect audio out 2 or audio out 3 to a loudspeaker placed in the same room as the microphones connected to the system. Doing this will cause “howling” and possible damage to the speaker system.

If an output is ‘Off’, no audio will be sent to that output.

Level Settings - Outputs

```
========= Level Settings =========
Out1:                ||||—— +13.5dB
Out2(AUX):           ||||—— +13.5dB
Out3(VCR):           ||||—— +13.5dB
Previous Menu
```

Adjust the audio output levels according to the parameters of the external audio equipment connected. These levels should be adjusted when installing new audio equipment only. The default settings are correct for the Tandberg Natural Audio module and for most consumer electronics devices (televisions, CD-players, VCRs, etc.).

The audio output levels specify the maximum level of the output.The audio outputs are adjustable in steps of 1.5 dB from 0 dB to 22.5 dB.

The volume control on the remote control will control the level of output 1 (the speaker output). The volume control will have no effect on output 2 and 3.

Echo Control

```
========== Echo Control ==========
Mic1:     Off   On    On+NR
Mic2:     Off   On    On+NR
Mic3:     Off   On    On+NR
Audio4:   Off   On    On+NR
Previous Menu
```

Each of the 3 microphone inputs and Audio input 4 have a separate echo canceller. One echo canceller per input provides more sophisticated control than having one common canceller for all microphones.

Echo control is normally set to On to prevent the remote site from hearing their own audio. Once selected On echo cancellation is active at all times. The echo canceller continously adjusts itself to the audio characteristics of the room and compensates for any changes it detects in the audio environment. If the changes in the audio conditions are very significant the echo canceller may take a few seconds to re-adjust.

You can choose to switch off the echo canceller for the available audio sources.

Echo Control
Echo Control should be switched **OFF** if external echo cancellation or playback equipment is used. Audio 5 and 6 do not have echo cancellation since these inputs are intended for audio playback equipment.

It is your echo canceller that improves the audio quality experienced by the other site. When you hear an echo of your own audio it is most likely the remote site's echo canceller that is malfunctioning.

Noise Reduction

In addition to echo cancellation the system has built in noise reduction algorithms (NR).

NR reduces constant background noise (e.g. noise from air-conditioning systems, cooling fans etc.). In addition, a highpass filter (Humfilter) reduces very low frequency noise.

Choose **On+NR** to activate both Echo Control and Noise Reduction.

AGC Settings

```
========== AGC Settings ==========
Mic1-3,Audio4:      Off   On
Audio5(AUX):        Off   On
Audio6(VCR):        Off   On
Received Audio:     Off   On
Previous Menu
```

Select On to allow automatic adjustments (Automatic Gain Control) of audio levels. When On, the AGC maintains the audio signal level at a fixed value by attenuating strong signals and amplifying weak signals. Very weak signals, i.e. noise alone, will not be amplified.

Example: In most conferences, the participants will speak at different levels, and be at different distances from the microphones. As a result, some of the participants will be harder to hear than others. The AGC corrects this problem by automatically increasing the mic levels when “quiet” or “distant” people speak, and by decreasing the mic levels when “louder” people speak.

> **Important**
> To ensure correct behaviour of the AGC, it is crucial that the levels on the input connectors are adjusted correctly using the audio input level settings. The AGC will not compensate for severe misadjustment of input levels.

When applying a weak signal in the presence of strong background noise, the leveller might amplify the background noise as well as the signal. Therefore, in noisy environments, it is advisable to turn the leveller off.

Tips for improving the echo canceller performance:

- Place all microphones as far as possible from the loudspeaker. Minimum loudspeaker-microphone distance should be 2 meters.
- Place all microphones as close as possible to the persons speaking. By using several microphones, the ratio distance loudspeaker-to-mic/mic-to-speaker can be increased. Increasing this ratio improves the echo canceller performance.
- Place all microphones as far as possible from noise sources.
- Reduce the volume setting. Ensure that the loudspeaker does not distort the audio.
- The echo canceller tries to estimate the echo path from the speaker system to the microphones. Moving objects change this path, therefore avoid moving objects. Be especially aware of large objects and objects placed close to either the microphone or the speaker system as these objects will cause severe changes to the echo path.

- Avoid putting paper sheets etc. on the microphone.
- Avoid moving the microphone or loudspeaker.
- In the event of poor echo cancelling, allow the canceller to adapt. After each change, the echo canceller requires a few seconds to adapt. Do not change settings etc. without allowing the canceller to adapt to the new settings.
- In the presence of low frequency noise, enable the noise reduction (NR).

Alert Tones & Volume

```
======= Alert Tones & Volume ======
Video Call Alert Tone:   A B C D E F
Telephone Alert Tone:    A B C D E F
Alert Volume (0=min):    |||— 8
Alert Speaker:           Off   On
Previous Menu
```

To help distinguish between incoming video calls and ordinary telephone calls, different ringing tones may be selected. You may also select different volume levels for the ringing tone.

Alert Speaker

The Vision 5000 also has an internal, call alerting speaker. When selected On the internal speaker will warn you of an incoming call even though the monitor may not be switched on.

Restore Audio Defaults

There are many audio settings. It is easy for the user to configure the codec to be unusable. Therefore it is possible to set all audio settings back to default settings by using Restore Audio Defaults.

Video input

```
=========== Video Input ===========
Video1 Name:   MainCam___
Video2 Name:   __________
Video3 Name:   __________
Video4 Name:   __________
Video5 Name:   __________
Camera Track Mode: Slow Norm Fast
Camera Adjustment
Previous Menu
```

Note
The Camera Track Mode entry will be greyed out if not using the standard Main Camera.

Enter a video source name

Use the UP and DOWN keys to select the video source. Press OK to edit the name for this source.

To select a video source, press the VIDEO SOURCE key and a number between 1-5 or see '*Selecting video source*' for further details.

To connect a video source, see '*Peripheral equipment*'.

Camera Track Mode

Select the camera tracking mode:

Slow: The system waits a while before zooming in on a single person speaking. Suitable when wide-angle images are preferred over close-up images.

Norm: Should be used in regular meetings.

Fast: The system quickly zooms in on a single person speaking. Suitable when close-ups are preferred over wide-angle images.

Camera adjustments

Allows manual adjustment of camera parameters. These adjustments applies to all WAVE Cameras in daisy chain.

```
======== Camera Adjustments =======
Focus
Backlight
Brightness
Whitebalance
Previous Menu
```

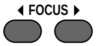
Focus

```
============ Focus ==============
        Auto       Manual

Press OK to exit
```

To manually adjust the focus select 'Manual' and use the 

and 

keys to adjust. This operation has the same functionality as using the 

keys on the remote control.

Backlight

```
=========== Backlight =============
        Off       On

Press OK to exit
```

This function is automatic in the WAVE Camera and is therefore disabled. Manual backlight adjustment is possible using older cameras.

Brightness

```
========== Brightness =============
        Auto      Manual

Press OK to exit
```

To manually adjust the brightness select ‘Manual’ and use the UP and DOWN keys to adjust.

Whitebalance

```
========== Whitebalance ===========
        Auto       Manual

Press OK to exit
```

In Auto mode the whitebalance is continuously updated. To update the whitebalance manually, select ‘Manual’ and press OK.

> **Tip**
> A white object should be held in front of the camera a few seconds before and after selecting Manual whitebalance.

Video output

```
========== Video Output ==========
Auto-PIP:                    Off   On
Still Image Filter:          Off   On
Auto-Display Still Image:    Off   On
Dual Monitor:                Off   On
Output 1-3:
    Interlaced
    Non-Interl.
Output 4-5:
    Interlaced
    Non-Interl.
Previous Menu
```

Auto-PIP

Select On to automatically display a PIP whenever the camera position or video source is changed and to have the remote site appear in PIP when in full screen selfview.

Still image filter

Select On to remove any instability in the high quality still image.

Auto-display still image

Select On to automatically display a received still image. If this selection is Off, you will have to press VIDEO SOURCE and 0 to display a still image.

Dual Monitor

Select On to show selfview and still images on the 2nd monitor. Toggle with SELFVIEW. If Off, the 2nd monitor shows selfview only. See section 'Sending/receiving graphics' for further information.

Output

If your external equipment requires an interlaced signal you can select it here. Outputs 1-3 provide the same signal as your main monitor. Outputs 4-5 provide the selfview/still image signal used on the 2nd monitor.

Terminal settings

```
======== Terminal Settings ========
Network             Data Port 1
Restore Defaults    Data Port 2
TCP/IP Settings     Language
Previous Menu
```

This menu provides basic network setup for the unit and should be used when installing the system. In addition to network setup and data port setup you can also select different languages for the system menus.

Network configuration

```
============= Network =============
Current Network:
    ISDN-BRI
    ISDN-PRI/T1
    External
ISDN-BRI Settings
ISDN-PRI/T1 Settings
External Network Settings
Previous Menu
```

Before using the system it is necessary to specify which network to use, and define the settings specific to that network.

If you want to use your system via ISDN-BRI you should select '*Current Network: ISDN-BRI*' and enter the '*ISDN-BRI Settings*' menu to set the BRI parameters.

If you want to use your system via ISDN-PRI/T1 (optional, USA only) you should select '*Current Network: ISDN-PRI/T1*' and enter the '*ISDN-BRI/T1 Settings*' menu to set the PRI/T1 parameters.

If you want to use special networks and connect using RS449, V.35, X.21 or connect to ISDN via an external IMUX you should select '*Current Network: External*' and enter the '*External Network Settings*' menu to set the External Network parameters.

ISDN-BRI Settings

```
======== ISDN-BRI Settings ========
ISDN Switch Type
Line 1 Setup
Line 2 Setup
Line 3 Setup
Line 4 Setup
Advanced ISDN Settings
Previous Menu
```

Note
Some software versions of Vision 5000 do not support 4 ISDN lines and one of the Line Setup lines will be grayed out. To find your configuration, see '*Power Up and System Info*' or boot-up text.

ISDN switch type

Select the type of ISDN network connected to your unit (PAL version).

```
========= ISDN Switch Type ========
ISDN Switch Type:
  ETSI  (Euro ISDN)
  Japan/Taiwan ISDN
  Australia ISDN
  1TR6
  National ISDN
  AT&T Custom ISDN
  Fetex ISDN
Previous Menu
```

Note
1TR6 should only be used if you are operating the system behind a PABX.

The NTSC version is shown below.

```
========= ISDN Switch Type ========
ISDN Switch Type:
  National ISDN
  AT&T Custom ISDN
  ETSI  (Euro ISDN)
  Japan/Taiwan ISDN
  Australia ISDN
  1TR6
  Fetex ISDN
Previous Menu
```

Line setup

This menu allows you to program the numbers associated with your ISDN line.

```
========== Line 1 Setup ===========
Enabled:        Off   On
Number1:        700
Number2:        701
SPID1:          012347700000
SPID2:          012347701000
 Previous Menu
```

If you want to use this ISDN line you need to set '*Enabled: On*' and enter the numbers of your ISDN line. If some of the ISDN lines are not to be used, set '*Enabled: Off*'. Line 1 should always be enabled.

In the USA you will also need to enter the SPID numbers associated with your ISDN numbers. If you have received two different SPID numbers for each ISDN line from your telephone company, you must program both.

When inserting ISDN line numbers, we recommend that you only use those digits that differ from number to number. See the following example:

Example:

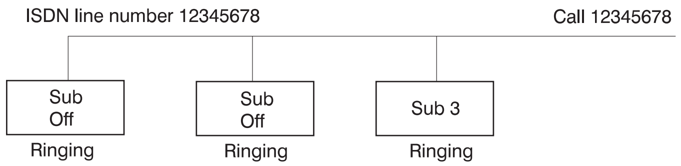
	Number	Line Setup	Line Setup USA (Number, Spid)
ISDN 1, Number1	2347700	700	700, 012347700000
Number2	2347701	700 or 701	701, 012347701000
ISDN 2, Number1	2347806	806	806, 012347806000
Number2	2347807	806 or 807	807, 012347807000
ISDN 3, Number1	2347842	842	842, 012347842000
Number2	2347843	842 or 843	843, 012347843000
ISDN 4, Number1	2347852	852	852, 012347852000
Number2	2347853	852 or 853	853, 012347853000

Advanced ISDN settings

```
===== Advanced ISDN Settings ======
Subaddress:                        ____
Default Call Type:                ________
Validate Numbers (MSN):           Off    On
Parallel Dial:                    Off    On
Downspeed:                        Off    On
Fallback to telephony:            Off    On
Send Own Numbers:                 Off    On
Previous Menu
```

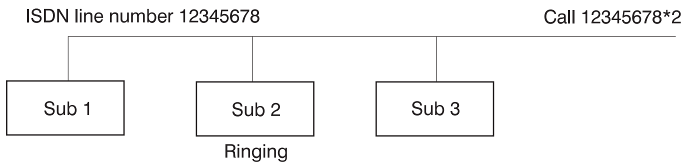
Subaddress

Using a subaddress enables you to connect up to eight ISDN terminals to the same ISDN telephone number and line. The terminals are addressed by using different subaddresses.



To call a terminal with a Subaddress, separate the ISDN telephone number and the subaddress with a '*'.

Example: 12345678*2 (Up to four digit subaddresses are possible)



USA: This service is not available on all networks in the USA.

Default Call Type

Default Call Type selects the number of channels to be used, by default, when placing a call. The Vision 5000 will by default try to make a 6B channel BONDING call. This feature can be bypassed by prefixing the dialled number as shown in the following listing.The format is **#n*yyy**, where n is the number of channels to dial and yyy is a call prefix you can use, e.g. 0 to access external line.

Prefix	Call type	Prefix	Call type
#12*	12B call (BONDING)	#2*	2B call (H.221)
#8*	8B call (BONDING)	#1*	1B call (H.221)
#6*	6B call (BONDING)	#92*	2B call (BONDING)
#5*	5B call (BONDING)	#91*	1B call (BONDING)
#4*	4B call (BONDING)	#0*	Telephone call
#3*	3B call (BONDING)	#81*	1xH0 channel call (PRI only)

Example: #12*10288 specifies an 12 channel call and the prefix 10288 to the number.

MSN (Multi Subscriber Number)

The use of MSN (Multi Subscriber Number) enables you to attach different ISDN terminals, with different numbers, to the same physical ISDN telephone line. If Validate Numbers is set to On only calls to those numbers specified in the Line Setup menus will be answered. This service can be ordered from your telephone company.

Parallel dial

If set to On, channels will be dialled and connected in parallel when setting up a BONDING call. If set to Off, channels will be dialled one by one which may increase the dialling time.

Downspeed

Downspeed enables your unit to automatically adjust to the maximum available bandwidth even if this is only a telephone call. The downspeed ability is always active when dialling without a prefix. If however, a prefix is used and downspeed is Off, a connection will not be possible unless the requested number of channels are available. We recommend that downspeed is set to On.

Fallback to telephony

Fallback to telephony enables fallback from video calls to telephony/speech calls.

Send Own Numbers

If set to On, this unit will send its own numbers to the remote unit. If set to Off, the network may still send your numbers to the remote unit.

ISDN-PRI/T1 Settings (optional)

```
        ISDN-PRI/T1 Settings
 Number:           __________________
 Max Channels:     |||||| 12
 Cable Length 1: |—— 0-133 ft
 Cable Length 2: |—— 0-133 ft
 PRI Switch Type
 Channel Hunting
 Advanced ISDN Settings
 Previous Menu
```

Note
The T1 format is predefined to ESF and the line code is B8ZS. This is not configurable.

Number

Enter the main number for your PRI/T1 line. If this number is programmed and MSN is on (see '*Validate numbers*' in '*Advanced ISDN Settings*') only calls to this number will be answered.

Max Channels

Max Channels specifies the highest number of channels the codec is allowed to use.

Cable Length 1&2

Cable Length 1 specifies the distance to the CSU connected to the 'PRI/T1 1' port on codec 1. Cable Length 2 specifies the distance from the 'PRI/T1 2' port on codec 1 to the 'PRI/T1 1' port on codec 2.

Possible values are 0-133 feet, 133-266 feet, 266-399 feet, 399-533 feet, 533-655 feet.

For further information refer to the example in:
Appendix 3: Connecting Vision 5000 to PRI/T1

Advanced ISDN Settings

This is the same menu as for ISDN-BRI. The settings will be common for ISDN BRI and ISDN PRI. Please refer to section '*ISDN-BRI Settings*'.

PRI Switch Type

```
========= PRI Switch Type =========
PRI Switch Type:
 AT&T ISDN
 National ISDN
Previous Menu
```

Select the type of PRI network to which your unit is connected.

Below is a list of common PRI switches.

Type	Manufacturer	PRI Switch Type setting
ATT 4 ESS	AT&T	AT&T ISDN
ATT 5 ESS	AT&T/Lucent	AT&T ISDN or National ISDN*
DMS 100	Northern Telecom	National ISDN
DMS 250	Northern Telecom	National ISDN

*Settings will depend on configuration of the switch.

PRI Switch Type is not changed when Restoring Defaults.

Channel Hunting

```
========= Channel Hunting =========
Low Channel:   _____
High Channel:  _____
Search:        High Low
Previous Menu
```

Channel hunting is normally only used with a PRI unit in the daisy chain which is not a Vision 5000. The channels outside low and high can then be reserved by other devices.

Channel hunting defines where to search for channels for outgoing calls. Low Channel default is 1 and High Channel default is 23.

Search defines if the channel search will start from the highest or lowest channel.

External network settings

```
==== External Network Settings ====
Call Control:
  RS366 Dialling
  Leased Line
  Data Triggered
  Manual
Network Clocking:
  RS449/V35 Compatible
  X21 Compatible
 Advanced Network Settings
 Previous Menu
```

IMPORTANT
The physical interfaces on External Networks are two non-standard 44 pin connectors. Special cables are required.

Before using the system together with external network equipment, you must specify the network parameters on this page.

Note
The system has support for up to 384/512/768 kbps using External Network (RS449/V.35/X.21) interface depending on software version.

Call control

‘*RS366 Dialling*’ is the only dialling protocol and would normally be used together with network clocking ‘*RS449/V35 Compatible*’ when the external equipment uses RS366 ports.

‘*Leased Line*’ is a non-dialling protocol and should be used when only two codecs are connected in a point to point connection. Use ‘*Leased Line*’ when handshake signals DTR and CD are available. DTR and CD correspond to the X21 network’s C and I signals.

‘*Data Triggered*’ mode uses TxData (transmit data), RxData (receive data) and clock signals only. Use ‘*Data Triggered*’ when no handshake signals are available.

‘*Manual*’ should be used when no handshake signals are available, and the external equipment requires a constantly connected line.

Network clocking

The network clock setting specifies the number of physical external clock signals.

Use '*RS449/V35 Compatible*' when the external equipment provides two clock signals, one for transmit and one for receive. The difference between RS449 and V35 is the cable only.

Use '*X21 Compatible*' when external equipment provides a common clock signal for both transmit and receive.

Advanced Network Settings

```
==== Advanced Network Settings ====
IMUX Default Prefix, Net1:  #001_
IMUX Default Prefix, Net2:  #001_
IMUX Restrict Offset:        10_
Previous Menu
```

IMUX default prefix

When using an external IMUX to make a call, you should specify a prefix which informs the IMUX of how to make the call (which protocol to use, number of channels etc.) in the absence of a user dialled prefix.

Example: To make a call using an Ascend Multiband VSX IMUX, you could use the following prefixes:

Prefix	Call Type		
#008	8B call (BONDING)	#003	3B call (BONDING)
#006	6B call (BONDING)	#002	2B call (BONDING)
#005	5B call (BONDING)	#001	2B call (H.221)
#004	4B call (BONDING)		

The default prefix is chosen to be #001, a call on 2 B-channels. If you want to change the default prefix, insert the same prefix at both Net1 and Net2.

Restrict offset

When using the # after the number, the restrict offset will be added to the prefix used. This means that if you want to make a 6 channel call to a 56 kbps network you should dial #006<number>#. If the restrict offset is 10, this is equivalent to dialing #016<number>.

Dataport configuration

The Vision 5000 provides a standard RS 232 serial port to allow a computer to be connected for data transfer and control purposes.

Note
When connecting to a PC the connecting cable *must* be a straight through RS232 cable.

Dataport 1

```
=========== Data Port 1 ============
Baudrate:      1200   2400   4800
               9600   19200  38400
Parity:        None   Odd    Even
Databits:      7      8
Stopbits:      1      2
Mode:          Data   Control
               Modem  T120
Previous Menu
```

If you wish to connect a PC to Dataport 1, you must ensure that the PC and the Vision 5000 are identically configured. The available settings are:

- Baudrate
- Parity
- Databits
- Stopbits
- Mode (Data channel, Modem and Control)

Dataport 1 supports 4 different modes:

- Data
- Control
- Modem
- T.120

Data mode
Provides a transparent data channel. This channel can be used for many different purposes such as file transfer, application sharing and more. When using this mode, it is necessary to have a Tandberg system at the remote site.

Control mode
The control interface provided by the Dataport supports a subset of the Hayes command set as well as a comprehensive set of Vision 5000 specific commands.

This mode maintains communication with the Dataport's command interpreter at all times. All features available from the hand-held remote control can be accessed through the dataport.

Modem mode
Allows you to control the Vision 5000 externally via a PC as in Control Mode. Once a call is established Dataport 1 will automatically switch to Data mode. When the call disconnects, Dataport 1 switches back to Control Mode.

T.120
Provides you with a data channel supporting the T.120 standard for data communication. Using T.120 software on your PC, you can communicate with other T.120 systems using your PC and your Vision 5000.

For more details on connecting to the Dataport, see '*Peripheral Equipment*'.

Dataport 2

```
=========== Data Port 2 ============
 Baudrate:      1200   2400   4800
                9600  19200  38400
 Parity:        None   Odd    Even
 Databits:      7      8
 Stopbits:      1      2
 Mode:          VISCA  Auto
 Previous Menu
```

Dataport 2 is dedicated to the main camera and will not be available in standard configuration.

The Codec will automatically detect Tandberg cameras. If you are using a camera supporting the VISCA protocol select '*Mode:VISCA*'.

Restore defaults

You may restore all system settings to the factory default using this function.

> **Note**
> This default setting will not affect your Call Directory information, Network Type, Line Setup numbers or your SPID numbers (US only)

TCP/IP Settings

```
========= TCP/IP Settings ==========
IP-assignment:        DHCP Static
IP-address:           ___.___.___.___
IP-subnet mask:       ___.___.___.___
Gateway:              ___.___.___.___
Previous Menu
```

Note
The IP-address and IP-subnet mask entries will be greyed out when IP-assignment is set to DHCP and are then not valid.

IP-assignment

DHCP (Dynamic Host Configuration Protocol) can be selected when a DHCP server is present. When using DHCP, IP-address and IP-subnet mask is not used because these parameters are assigned by the DHCP server. When using DHCP the IP address given is displayed in the boot-up text and in '*Test Subsystem*'.

If **Static** is selected, the codec's IP-address and IP-subnet mask must be specified in the IP-address field.

IP-address

A IP-address defines the network address of the codec and is defined by 4 numbers in the range of 0-255. This address is only used in static mode. The IP-address can be found in the boot-up text.

IP-subnet mask

A IP-subnet mask defines the type of network and is defined by 4 numbers in the range 0-255. This address is only used in static mode.

If the setting is 255.255.255.0 the local network can have 256 nodes. This is a class C network.

If the setting is 255.255.0.0 the local network can have 65536 nodes. This is a class B network.

Gateway

When using DHCP, the default gateway should automatically be set. If the LAN utilizes static IP's, an IP number, subnet mask, and default gateway must be specified by the LAN administrator.

See section 'Ethernet Functionality' for further information.

Ethernet Functionality

The system supports TCP/IP connectivity over Ethernet. The following functionalities are supported:

- Control of the system via a standard WWW-browser
- Dataport access using Telnet (described in the document ‘Dataport User Guide’)*.
- Software Upgrade using WWW-browser or FTP (described in the document ‘Upgrading Software’)*.
- SNMP (Simple Network Management Protocol) (MIB-II)*.

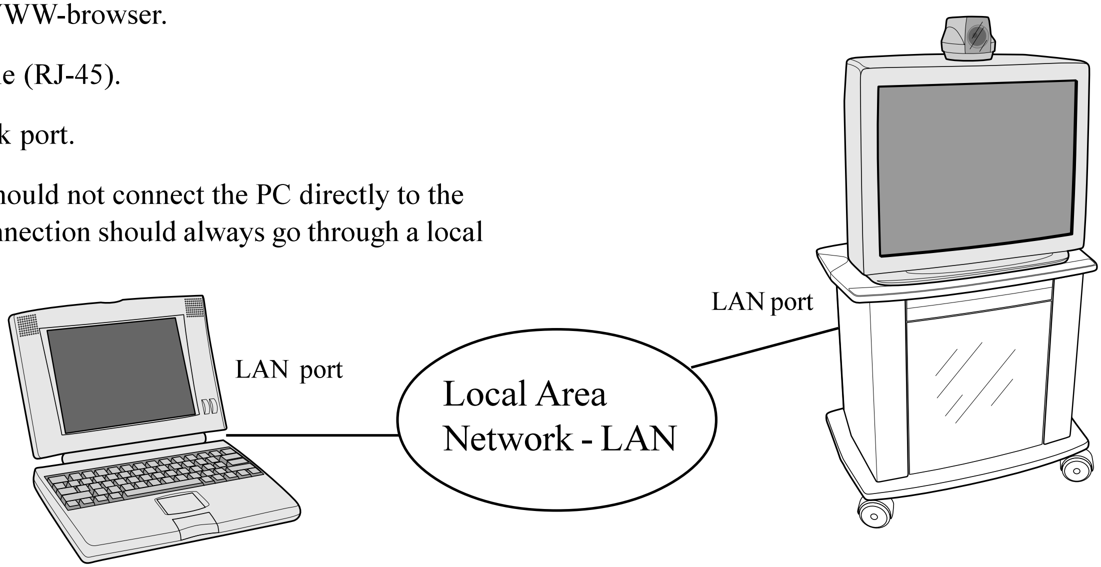
WWW-interface

It is possible to access the system remotely via a local area network (LAN) using a standard WWW-browser.

What is needed

- PC with a WWW-browser.
- Ethernet cable (RJ-45).
- LAN-network port.

NOTE: You should not connect the PC directly to the codec. The connection should always go through a local area network.



* - Please contact your dealer for further information.

How is it done

Connect your system to a local area network. The network cable should be connected from the LAN-port at the rear of the codec to a port in your network using a standard RJ-45 cable.

Configure your codec by performing the following:

- Press MENU, select '*Terminal Settings*', '*TCP/IP Settings*'
- Specify IP-assignment '*DHCP*' or '*Static*'. If '*DHCP*' is selected no other settings are needed. If Static is selected, '*IP-address*', '*IP-subnet mask*' and '*Gateway*' must be specified.

  Example:

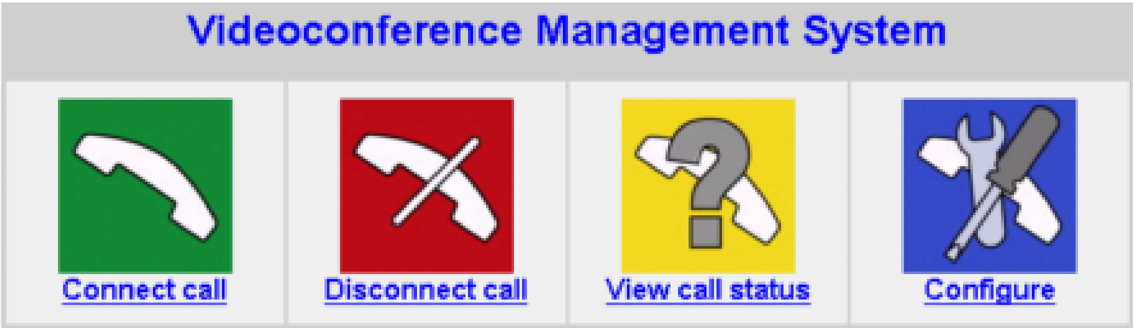
IP-assignment:	Static
IP-address:	192.9.200.111
IP-subnet mask:	255.255.255.0
Gateway:	192.9.200.21

See chapter '*TCP/IP Settings*' in '*Advanced use*' for further information on these settings.

- Start your Web-browser. In the address field type the IP-address of the codec

  Example: 192.9.200.129

- You will now see the front page of the codec's Web-interface.



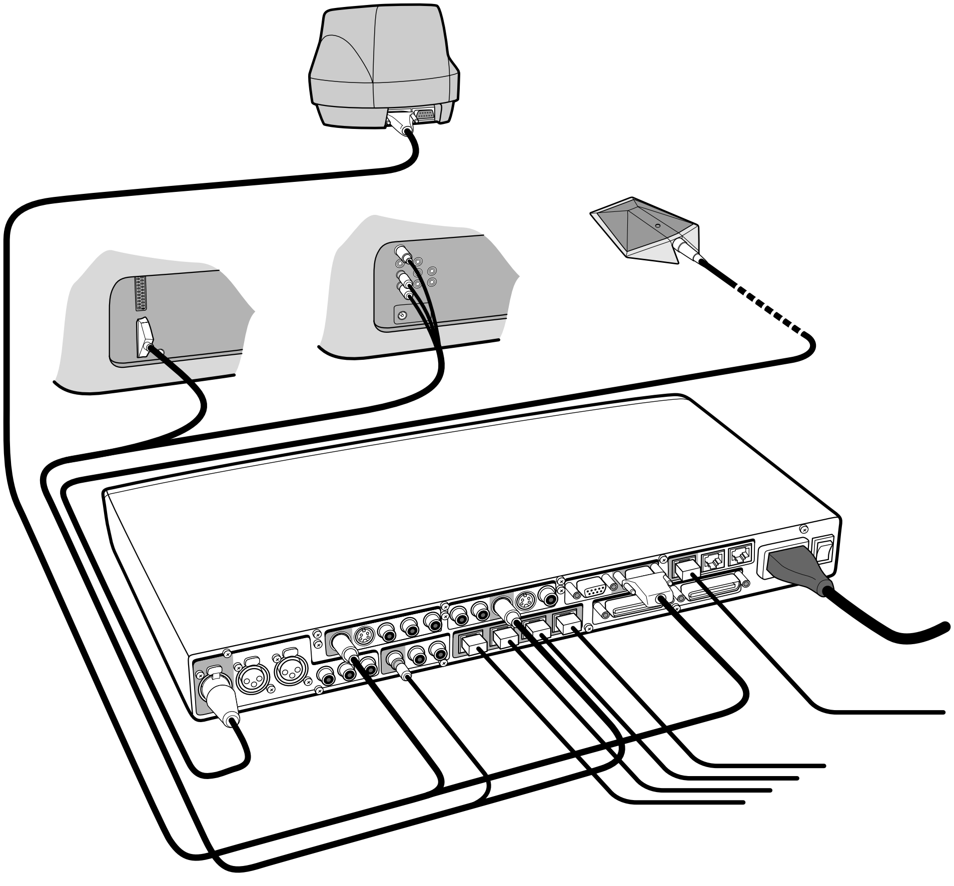
The following Web-browsers have been tested:

- Netscape Communicator 4.05
- Microsoft Internet Explorer 4.0 and 3.0
- Opera 3.51

Peripheral Equipment

Using the peripheral devices outlined in this manual and the many others available you will be able to build your own applications for use with the Vision 5000 thereby better integrating the system into your business environment.

This chapter will explain how to connect peripheral equipment to your Vision 5000. However, first of all we recommend you examine the figure below detailing the available connectors on the back of the system Codec.



Interfaces

5 Video Inputs

• 2 video inputs supporting S-Video through Mini-DIN connectors.

• 3 video inputs supporting composite signals through RCA connectors.

The standard camera uses one of the S-Video inputs. The inputs are selected using the VIDEO SOURCE button.

The system will automatically adapt to a PAL or NTSC input

5 Video Outputs

• 2 supporting S-Video through Mini-DIN connectors

• 3 supporting Composite signals through RCA connectors

The first 3 connectors provide main video (incoming/outgoing video and menus). The last 2 connectors provide selfview/still image. The monitor uses one of the S-Video outputs. The outputs are always active.

The format of the output will be either PAL or NTSC depending on your country's standard video format.

6 Audio Inputs

• 3 microphone inputs (balanced, 24V phantom powered) via XLR connectors.

• 3 audio inputs (line level) via RCA connectors.

All audio inputs are active by default. For further information, refer to section 'Audio Setup'.

3 Audio Outputs

• 1 output (line level) via RCA connector providing audio from remote side in addition to dial tones. This output is used either by the monitor or by the Natural Audio module (if installed).

• 1 AUX output (line level) via RCA connector providing a mixed signal between audio from the local side and audio from the remote side. This output is intended for connection to a telephone add-on system.

• 1 VCR output (line level) via RCA connector providing a mixed signal between audio from the local side and audio from the remote side. This output is intended for connection to a VCR.

For further information refer to section 'Audio Setup'. See examples later in this chapter.

Dual Monitor (optional)

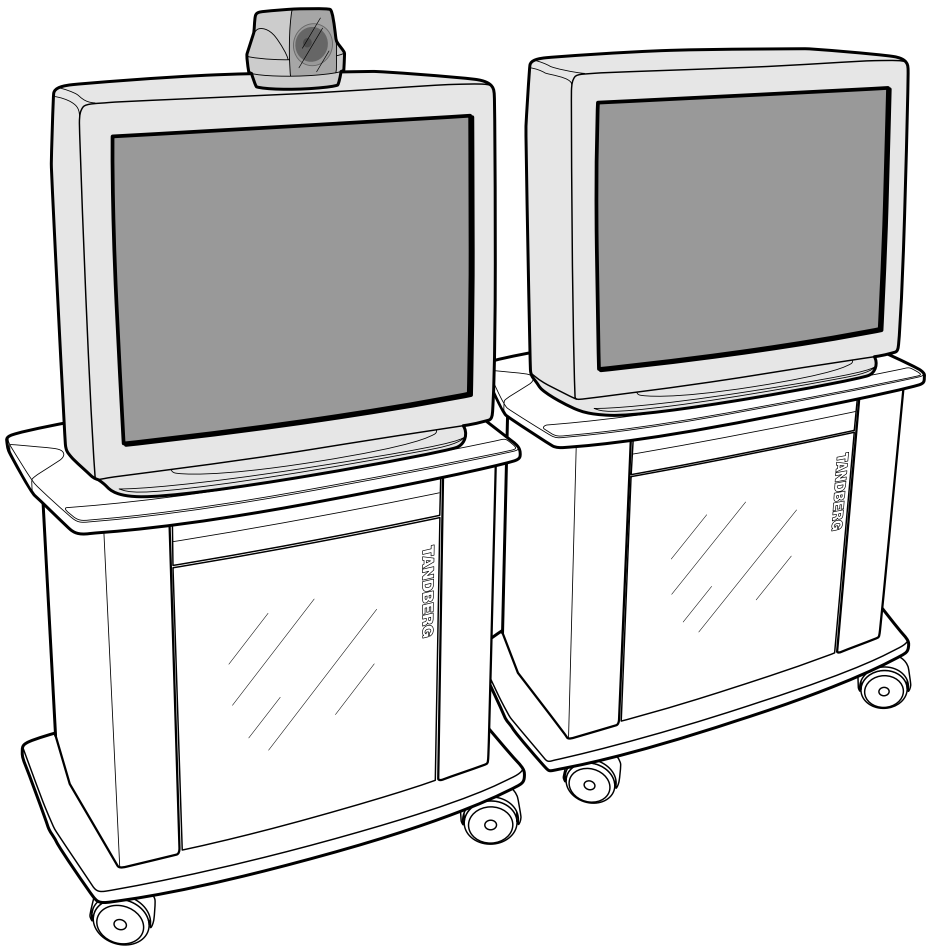
It is possible to install the Vision 5000 system in a Dual Monitor configuration.

The Dual Monitor system consists of an additional monitor, cart and associated cabling.

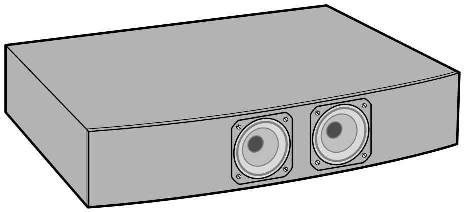
The Dual Monitor can be used to show full screen selfview and still images.

To use the Vision 5000 in the Dual Monitor configuration:

- Connect ‘Video Out 4’ (preferably) otherwise 5 on the Vision 5000 to a video input on the monitor.



Natural Audio module (optional)



The Natural Audio module is designed to improve the audio quality during a videoconference. It consists of a specially designed speaker system optimized for speech. The monitor audio system is not used when using the Natural Audio module.

The Natural Audio module uses a frequency-compensated speaker system optimized for voice response and is designed specifically for videoconferencing requirements.

The Natural Audio module provides natural sounding audio - as if the person is in the same room - by delivering a flat response across the vocal range.

Monitor speakers are optimized for music and not designed to reproduce speech. Natural Audio reproduces voice without the distortion of speech caused by television speakers.

AudioScience module (optional)

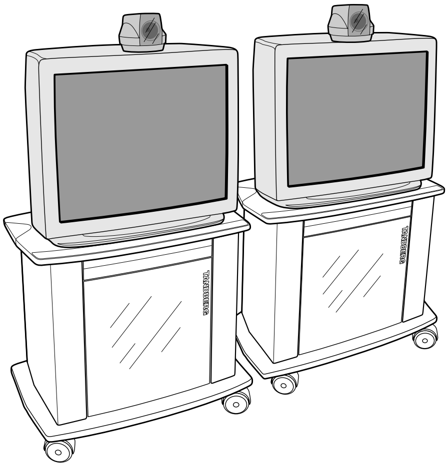
Tandberg's prize-winning AudioScience microphone is a ceiling-mounted, wide coverage, boundary microphone, that can eliminate the need for table microphones. It is designed to pick up the audio from all conference participants seated within in its pick-up area, defined by a quarter-sphere of approximately 14 foot (4.25m) radius extended in front of, and to the sides of the microphone.

Please contact your dealer for further information.

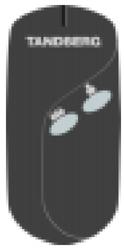
Multiple controllable cameras (optional)

The system is able to control up to 5 WAVE-cameras (like the Main Camera). Optional WAVE-cameras are supplied with a cable and a power supply.

WAVE-camera number two must be connected to video input 2, camera number three must be connected to video input 3, and so forth.



Tracker (optional)



The Tracker has two buttons:

- One button to point the camera at one person.
- One button to point the camera at all participants.

The Tracker was designed to give all participants in the meeting their own remote control. The participant simply presses the ‘Single person’ button to let the camera point at him/her. To show all participants one of the participants can press the ‘Group’ button.

The ‘Group’ button can be set to activate P1 (preset 1) or 

.

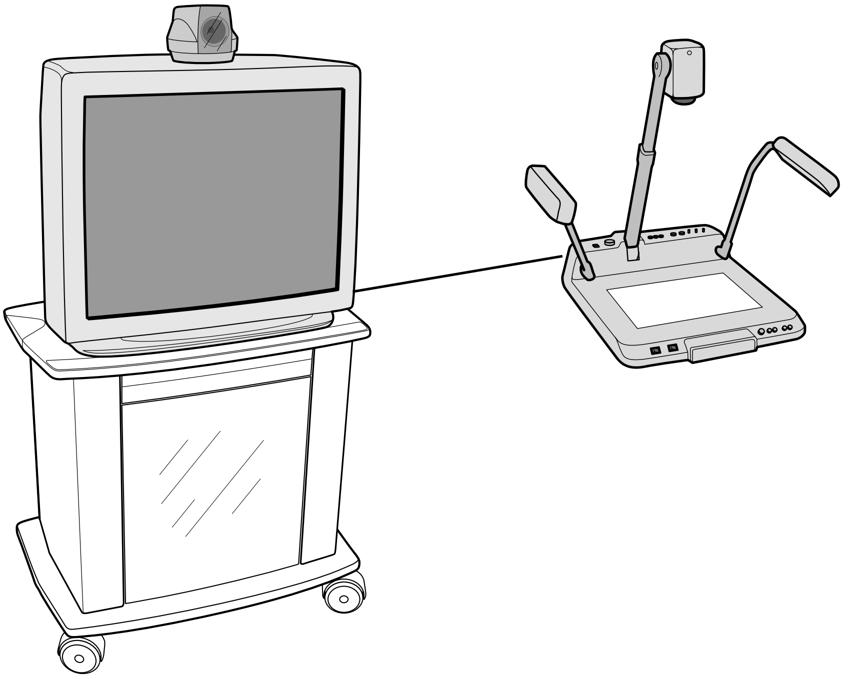
The ‘Single person’ button can be set to activate P2-P15.

Document camera

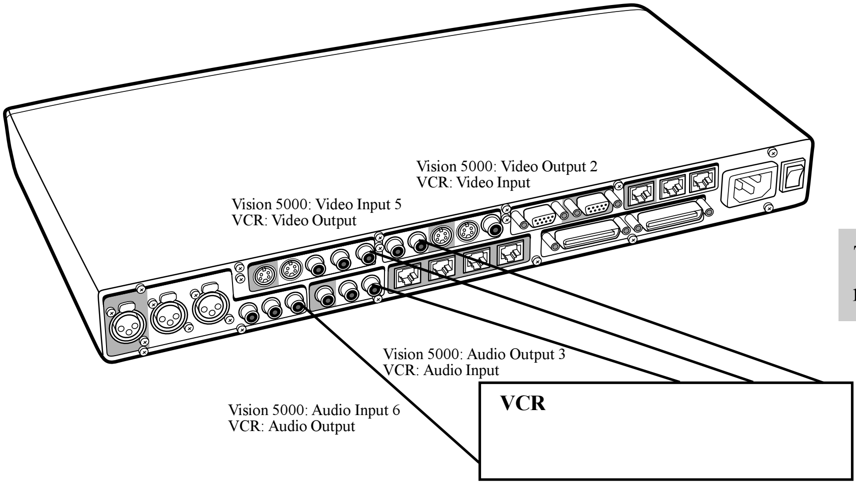
A document camera can be used for showing text, diagrams and a variety of graphical material as well as small three-dimensional objects. To use a document camera with your Vision 5000:

- Connect the document camera to one of the Video inputs on the Codec.
- Press VIDEO SOURCE and choose the relevant ‘Video In’ source to select the document camera as the source.
- Enter the menu system, select ‘Video Input’ and name the video source associated with the document camera.
- We recommend storing the document camera input using one of the presets, P0-P9, to facilitate fast and easy selection during a conference.
- See also ‘Presentation Settings’ for easy access to still image transfer from document camera.

Tip
If the document camera has an S-Video output you should use this output to connect to the S-Video input on the system Codec. This will ensure you obtain the best possible image quality.



Video Cassette Recorder (VCR)



To simplify connecting a VCR, the necessary connectors are marked 'VCR'

VCR - Playback

For playback, connect a cable between Video Out on the VCR and 'VideoIn 5 (VCR)' on the system and from Audio Out on the VCR to 'AudioIn 6 (VCR)' on the system.

Select correct video input on the system using VIDEO SOURCE. Make sure that 'Audio In 6 (VCR)' is On (see 'Audio Setup'. If audio from VCR is too low, this level can be adjusted in 'Audio Setup', 'Inputs', 'Level Settings'. The audio from the VCR will be audible in the local speaker system.

The audio from the VCR and your microphone(s) will be mixed and sent to the other side. When a person talks the VCR level will be reduced to make it easier to comment a video recording (when '*Audio Setup*', '*Mix Mode: Auto*').

VCR - Recording

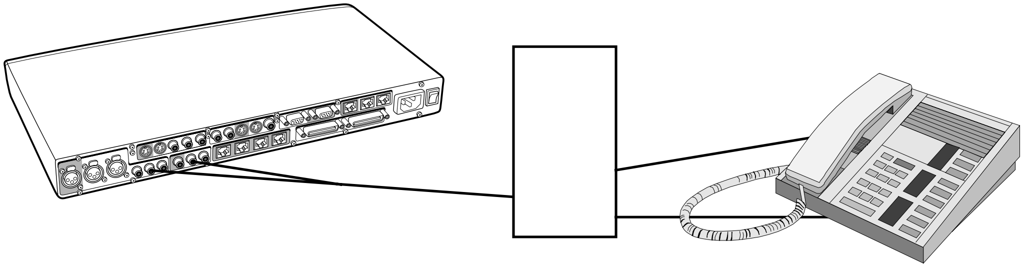
When recording, the VCR will record the video as showed on the main monitor, the local audio and the audio from the other side.

When recording a videoconference, connect a cable between 'VideoOut 2' on the system and Video In on the VCR. Connect a cable between 'AudioOut 3' on the Vision 5000 to Audio In on the VCR.

Telephone Add-On

A telephone add-on is used when you want to include a telephony participant in the meeting. You can also use this functionality when you want to have conference participants in an adjacent room with its own microphone and speaker system.

The telephone add-on connectors are marked AUX on the Vision 5000 (audio input 5 and audio output 2). Audio output 2 provides a mixed signal between local and remote side.

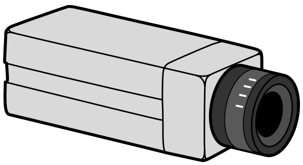


Extra cameras

You can connect extra cameras to your Vision 5000, for example, a whiteboard camera. The procedure for connecting an additional video source is as follows.

Connect the video output of the additional camera to one of the available Video In sockets on the system Codec.

We recommend storing the additional camera input using one of the presets, P0-P9, to facilitate fast and easy selection during a conference.



PC applications

A PC can be connected to the Vision 5000 in two different ways.

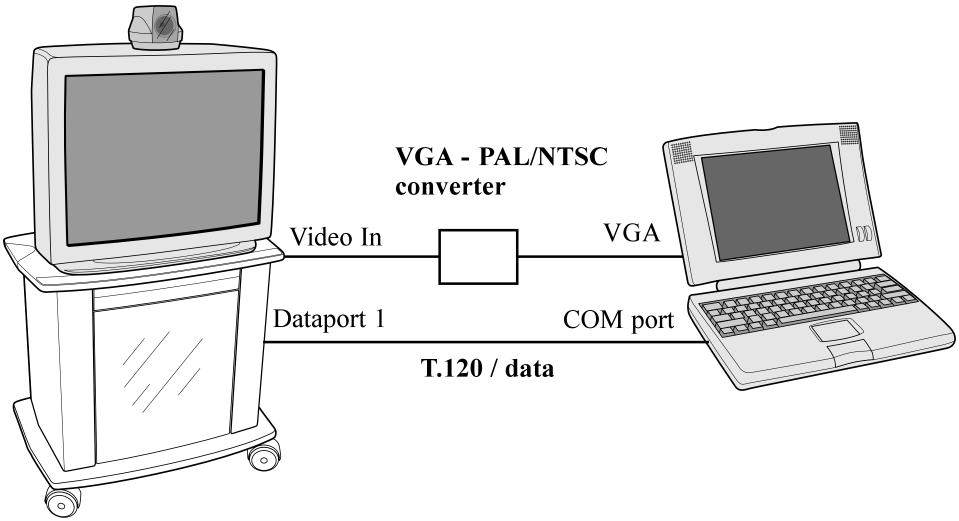
- Through a VGA to PAL (or NTSC) converter.
- Through an RS232 data cable.

VGA to PAL converter
By connecting your PC to a VGA-PAL (NTSC) converter and taking the video signal out of this box and into the 'VideoIn' on the Vision 5000, you may show your PC documents to your participant(s) at the far end. Please contact your dealer for more information.

T.120 and other PC applications
A PC can be connected to the Vision 5000 using a serial cable. This will enable interactive editing, file transfer and application sharing between two computers.

Appropriate communication software should be used (for example: Microsoft NetMeeting, Intel ProShare Premier, Windows HyperTerminal, Procomm Plus and so forth.)

The Vision 5000 has been specially designed to work with interactive programs and includes a data channel that can send and receive data to and from a remote unit at speeds of up to 38,400 baud.



Additional microphones

If your environment is such that you require more than one microphone for your room, e.g. you have a whiteboard a long way from your table microphone, then you may connect additional microphones to your Vision 5000.

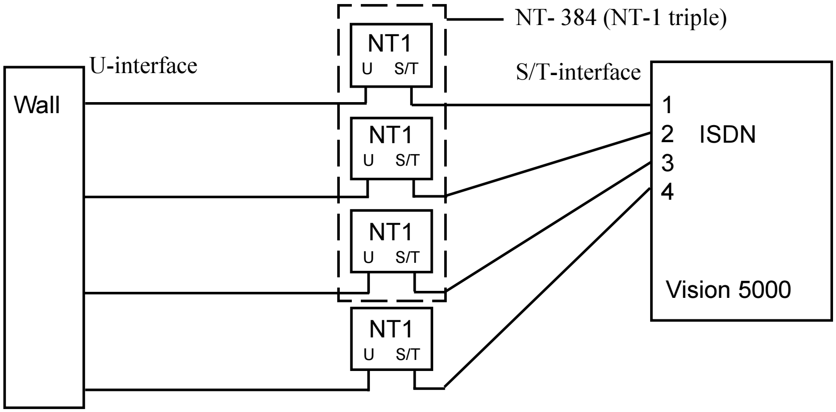
Connecting additional microphones to your Vision 5000:

You can connect up to three microphones to your Vision 5000. The connectors are marked Mic1, Mic2 and Mic3. The connected microphones will by default be mixed.

Appendices

Appendix 1: Connecting Vision 5000 to ISDN using NT1 network adapters

Connecting
Connect the first ISDN cable from ISDN 1 on the codec to the S-interface on your first NT1 network adapter. Connect the second, third and fourth ISDN cable to the appropriate NT1 network adapters.



Connect the U-interface of your NT1 adapter to the line provided from your network provider.

For convenience the NT1 adapters could be placed inside the cart. If needed, use the shorter ISDN cable (RJ45 connectors) delivered with the NT1 between the codec and the NT1 and the longer ISDN cable between the NT1 and the connector (RJ45) at the wall socket.

Configuring
The configuration of the codec is performed in the same manner as described in ISDN BRI Settings.

The NT1 should be powered up and you should check that the network is active. Please check your NT1 User Manual.

Appendix 2: Connecting Vision 5000 to the Switched 56 network

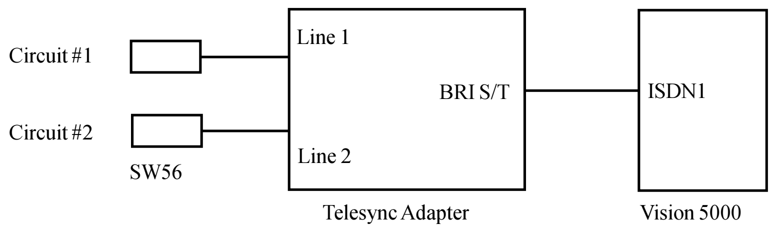
Using Telesync TS-256 SW56/ISDN adapter

Connecting the Vision 5000 to the SW56 network using a Telesync Adapter will allow up to 2x56kbps transmission.

NOTE: There are different Telesync Adapters for different configurations of SW56 networks. The network types tested with Vision 5000 is SW56 2Wire and 4Wire.

Connecting

Connect the Vision 5000 ISDN1 cable to the BRI S/T interface on the Telesync Adapter. Connect the two SW56 cables from the Telesync adapter Line 1 and Line 2 to the SW56 network.



Configuration of Telesync Adapter

No configuration of the Telesync Adapter is necessary.

Configuration of Vision 5000

Select network type to ‘National ISDN1, 1 number’.
‘Line Setup 1’ configuration:

Set ‘Number1’ and ‘SPID1’ enter your SW56 number for the first line.
Important: ‘Number1’ and ‘SPID1’ must be exactly the same number.
Leave ‘Number2’ and ‘SPID2’ blank.

Disable ‘Line Setup 2’, ‘Line Setup 3’ and ‘Line Setup 4’.

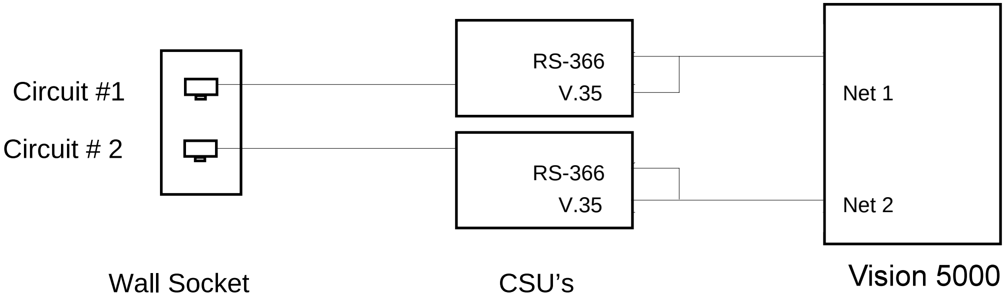
How to call

Important: Add the # sign when you dial a number.

Example:
One number dialing enter: 1703111222#
Two number dialing enter: 1703111222**1703111223#

Using CSU/DSU's

Connect the RS366/V35 cable to NET 1 and CSU#1
Connect the RS366/V35 cable to NET 2 and CSU#2 .



The cable set consists of a pair of RS-366/V.35 cables cable and should be connected thus:

Configuration of Vision 5000

Press MENU on the remote control. Select 'Terminal Settings'.
Select 'Current Network: External' and check the following:

```
==== External Network Settings ====
Call Control:
   RS366 Dialling
   Leased Line
   Data Triggered
   Manual
Network Clocking:
   RS449/V35 Compatible
   X21 Compatible
 Advanced Network Settings
 Previous Menu
```

```
==== Advanced Network Settings ====
IMUX Default Prefix, Net1:   _____
IMUX Default Prefix, Net2:   _____
 IMUX Restrict Offset:        ___
Previous Menu
```

V.35/RS-366 cable

Signal Name	Female 44pin DSUB	Male 34pin Winchester	Male 25pin DSUB
Frame ground	1	A	
Signal ground	15,25,28,44	B	
TX(A), transmit data	29	P	
TX(B)	30	S	
RX(A), receive data	40	R	
RX(B)	39	T	
RCLK(A), rcv clock	37	V	
RCLK(B)	38	X	
TCLK(A), xmt clock	41	Y	
TCLK(B)	42	AA	
DTR	7	H, C	
RI	43	L, J	
RLSD	36	F	
DSR	6	E	
RS366 DPR	9		2
RS366 ACR	10		3
RS366 CRQ	11		4
RS366 PND	12		5
RS366 DLO	13		22
RS366 NB1	21		14
RS366 NB2	22		15
RS366 NB4	23		16
RS366 NB8	24		17
RS366 DSC	14		13
RS366 GND	35		7

Clear the 'IMUX Default Prefix, Net1', 'IMUX Default Prefix, Net2' and 'IMUX Restrict Offset'.

If the CSU's are connected and configured properly (see next page), you are now ready to make your videoconferencing calls.

Configuring your CSU/DSU

Recommended configuration of your CSU/DSU using TANDBERG equipment.

Motorola	UDS SW-56	Software revision : 350427RF
Transstream	T1100	With RS-366 Apac
Transstream	T1000	With RS-366 Apac
Inc		CM-1056,CM-1056 DP
Adtran		DSU III S4W

Motorola DSU

DSU Line 56000bps
TIMING DDS
OPERATION OVER SW. LINE YES
DTE 56000 bps.
DTE TIMING SLAVE
SYNCHRONOUS DATA
BUFFER DISABLED
CTS FOLLOWS RTS
ANTISTREAM OFF
DCD NORMAL
DSR ON DURING LOOPBACK
DTE RL DISABLED
DTE LL DISABLED
DTR AUTO DIAL OFF
RESPONDS TO DTR
EIA-366 DIALER
SPEAKER DISABLED
BISYNC DIAL OFF
HDLC OFF

Adtran DSU III S2W/4W
Config
Local
- Network options
  - Network Type = AT&T /MCI/Other or Sprint
- DTE Options
  - DTE Rate = 56k
  - Connector Type = V.35
  - Data Format = Synchronous
  - DTE CMD Option = Disabled
  - Transmit Clock = Normal
  - CS Options = Forced On
- CS Delay Short
  - CD Options = Normal
  - TR Options = Idle When Off
  - SR options = Forced ON

Test Options Ignore
Dial Options
- Auto Answer = Disabled (In some cases: enabled)
- RS 366 EON = Enabled

Manual Command Ignore

Transstream T1100 DSU

Network	Accunet.
Auto Answer	Yes
DTR Asserted	No
DSR Asserted	Yes
RTS Asserted	Yes
CTS in Data Mode	Yes
Audible Alarm	Off
Remote Loop Back	Ignore
Wait for answer	060
Speaker	On

Transstream T1000
DIP switches should be set in the following way, where the bold selections shows which settings to choose:

SW2		SW3	
Left Side	Right Side	Left Side	Right Side
1 **Sync**	Async	**Normal**	Auto originate
2 **Normal**	Autobaud	**Normal**	Far End Loop
3 **Command Port**	Port A	**Normal**	Local Loop
4 Data Port	**Port A**	**Normal**	Line Loop
5 7 Bits	**8 Bits**	**Int. Clock**	External Clock
6 **Normal**	DTR Assert	**Normal**	Back to back
7 **Normal**	RTS Assert	**Normal**	Adapt
8 **Normal**	CTS Delay	**Auto Answer**	Manual

INC DSU
Set the DIP switches set as follows.

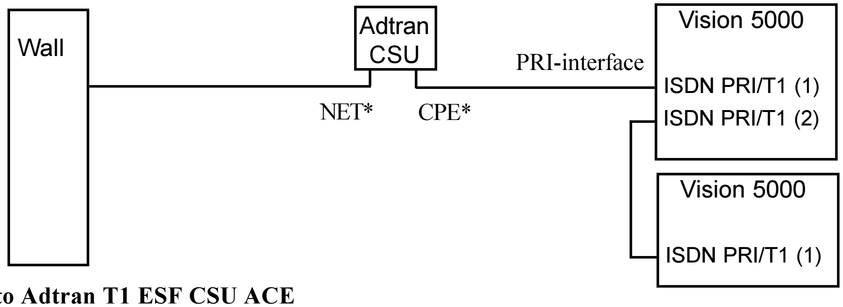
1. RS-232 Dial Port	DOWN/OFF
2. Loop Master	DOWN/OFF
3. System Status	UP/ON
4. Switched 56 Operation	UP/ON
5. Keypad Enable	UP/ON
6. Permanent Request To Send	DOWN/OFF
7. Permanent Data Term. Ready	DOWN/OFF
8. Circuit Assurance	DOWN/OFF
9. Data Mode During Local Loop	UP/ON
10.Remote Digital Loop Enable	UP/ON

For configuration of other CSU's refer to the appropriate user manuals.

Appendix 3: Connecting Vision 5000 to PRI/T1

Using CSU adapter

Connecting the Vision 5000 to the ISDN network via the PRI/T1-interface using an Adtran T1 ESF CSU ACE will allow up to 768 kbps transmission. The PRI/T1-interface must be connected to a CSU approved according to IEC 60950, UL 1950 or equivalent standard.
NOTE: The PRI-line will run the AT&T 4ESS protocol only.



*RJ-48C type interface

Connecting to Adtran T1 ESF CSU ACE

Connect the PRI cable from the Vision 5000 to the input marked CPE on the Adtran CSU (straight through category 5 cable is recommended). Connect to the network via the NET connector on the Adtran CSU. When two Vision 5000 are cascaded, connect the second Vision 5000 to the PRI/T1 port 2 on the first Vision 5000 using a T1 crossover cable.

Configuration of Vision 5000

Press MENU on the remote control. Select 'Terminal Settings', 'Network'.

Select 'Current Network: PRI/T1' and specify your PRI number, max. channels and cable length (between Vision 5000 and CSU):

```
ISDN-PRI/T1  Settings
 Number:             ____________________
 Max  Channels:     ||||||  12
 Cable  Length  1:   |——  0-133  ft
 Cable  Length  2:   |——  0-133  ft
 PRI  Switch  Type
 Channel  Hunting
 Advanced  ISDN  Settings
 Previous  Menu
```

> **Note**
> Cascaded connection:
> Remember to program numbers and MSN.
> Otherwise, the first codec will answer all calls.

Configuration of Adtran T1 ESF CSU ACE

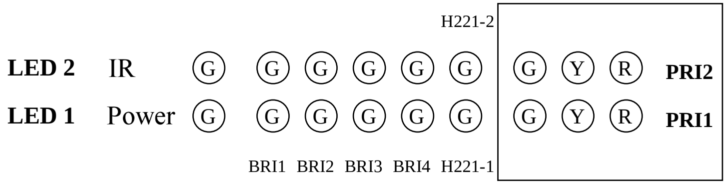
*Enter '2)CONFIG' menu using SCROLL and ENTER buttons.
*Enter '3)TERMINAL' menu. Check '1)FORMAT:ESF'
'2)CODE: B8ZS'
'3)SET LBO: 0-133' (Corresponding to 'Cable Length' setting on Vision 5000.
*Go to main menu and enter '1)NETWORK' menu.
'7)SET LBO: 0.0 (According to information from Telco).
Also other network parameters should be set according to information from Telco.

Making a call

To make a call, enter the number and press SEND. See chapter 'Making and ending calls'.

Appendix 4: LED indication

On the front of the Codec, there are 18 LEDs to give the user precise information on the status of the Codec and the network activity. The LED display is specially designed to provide the user with quick and accurate indications whenever there is a change of status. ‘G’, ‘Y’, and ‘R’ mean green, yellow, and red, respectively. (For convenience the LEDs in the example below are diveded into 2 boxes refered to as Left and Right, although there is not such a division on the physical display)



Each LED can have three states; off, blink, and on. All states are not applicable to all LEDs. The table below shows the possible LED states for the LEDs in the **Left box**.

LED	**LED1**	**LED2**	**Description**
Power	Off		Power is off
	On		Power is on
IR		Blink	IR code received
H221	Off	Off	No call
	On	Off	H221 active on 1 channel (PRI/Ext)
	On	On	H221 active on 2 channels (PRI/Ext)
	Off	On	N/A
BRI (1-4)	Off	Off	Layer 1&2 active or BRI disabled
	Blink	Off	Layer 1 active, Layer 2 deactivated
	Blink	Blink	Layer 1 deactivated
	On	Off	Connected on 1B
	On	On	Connected on 2B

The PRI LEDs in the **Right box** are indicating PRI/T1 status and are defined as below:

Green	**Yellow**	**Red**	**Description**
Off	Off	Off	PRI disabled
Off	Off	Blink	Blue alarm
Off	Off	On	Red alarm
Off	On	Off	Yellow alarm
Off	On	Blink	Blue and yellow alarm
Off	On	On	Red and yellow alarm
Blink	Off	Off	Sync (Layer 2 deactivated)
On	Off	Off	Established
Blink	Blink	Off	Sync and loop active (Layer 2 deactivated)
On	Blink	Off	Established and loop active

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Symbols